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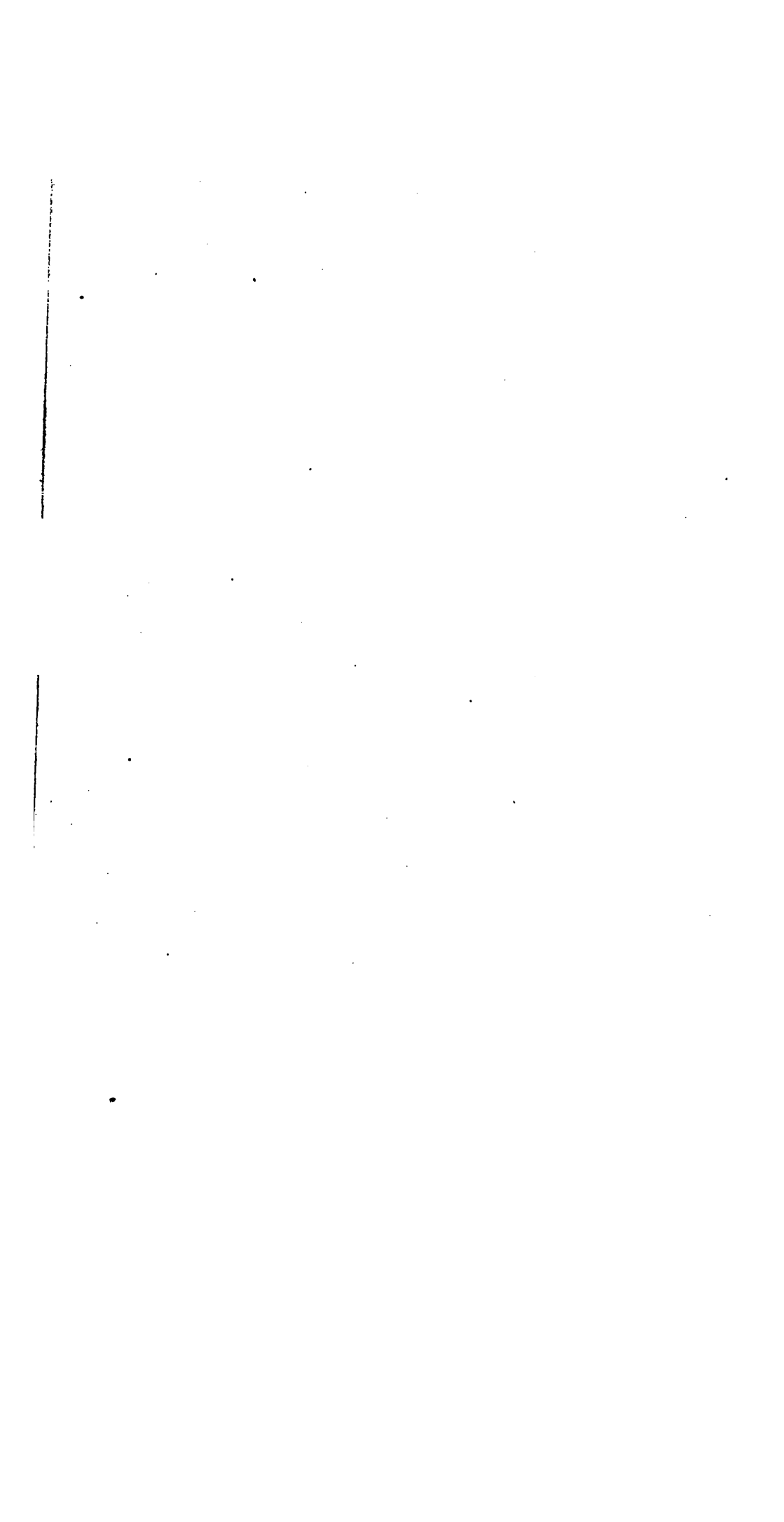
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DEPARTMENT OF THE INTERIOR  
UNITED STATES GEOLOGICAL SURVEY  
GEORGE OTIS SMITH, DIRECTOR

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BULLETIN 372

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BIBLIOGRAPHY  
OF  
NORTH AMERICAN GEOLOGY  
FOR  
1906 AND 1907  
WITH SUBJECT INDEX

BY

F. B. WEEKS AND J. M. NICKLES



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**Allorge, Maurice.**

29. Esquisse géographique du Cap Cod (États-Unis).—Annales de Géog., Ann. 15, no. 84, pp. 443-448, 1 pl., 1 fig., November 15, 1906.

Describes the physiographic features of the region.

**Althouse, Harry W.**

30. The Pocahontas coals, Pottsville series no. XII, in Raleigh and Wyoming counties of West Virginia.—Min. Mag., vol. 13, no. 3, pp. 201-213, 7 figs., March, 1906.

Describes the geologic horizon, vein structure, thickness, and quality of these coals.

31. Geology of the Buck Mountain coal bed.—Eng. and Min. Jour., vol. 83, pp. 668-670, 2 figs., April 6, 1907.

32. The so-called new supplies of anthracite [Pennsylvania].—Eng. and Min. Jour., vol. 84, pp. 500-503, 4 figs., September 14, 1907.

Discusses the occurrence and geologic relations of anthracite coal beds.

**Amador, Manuel G.**

33. Los principales centros auríferos del mundo. Estudio sobre la producción actual del oro.—Soc. cient. "Antonio Alzate," Mem. y Rev., t. 23, pp. 355-381, 1906.

Describes the production and general geology of the principal gold-producing areas of the world.

**American Society of Civil Engineers.**

34. Report of a general committee and of six special committees of the San Francisco Association of members of the American Society of Civil Engineers. The effects of the San Francisco earthquake of April 18, 1906, on engineering constructions.—Am. Soc. Civil Eng., Proc., vol. 33, no. 3, pp. 299-354, 31 pls., 3 figs., March, 1907. Discussion by Edwin Duryea, and others, *ibid.*, vol. 33, no. 5, pp. 537-547, 1 pl., May, 1907; Trans., vol. 59, pp. 208-329, 1907.

**Ami, Henry M.**

35. On the geology of Carp [Ontario] and environs.—Ottawa Nat., vol. 19, no. 4, pp. 92-93, July, 1905.

36. Bibliography of Canadian geology and paleontology for the year 1904.—Canada, Roy. Soc., Proc. and Trans., 2d ser., vol. 11, sect. 4, pp. 127-152, 1906.

37. Notes on an interesting collection of fossil fruits from Vermont, in the Museum of the Geological Survey of Canada.—Ottawa Naturalist, vol. 20, no. 1, pp. 15-17, April, 1906.

**Ami, Henry M.**—Continued.

38. Bibliography of Canadian geology and paleontology for the year 1905.—Canada, Roy. Soc., Proc. and Trans., 2d ser., vol. 12, sect. 4, pp. 301-326, 1906.

39. Preliminary lists of organic remains [collected by Mr. A. P. Low from Beechey Island, Southampton Island, and Cape Chidley].—Cruise of the Neptune, pp. 329-336, 1906 (see Low, no. 1623).

40. On some fossils from northern Canada, collected by Commander Low, during the expedition of 1903-4, together with notes on the geological horizons to which they belong.—Abstract: Science, new ser., vol. 23, p. 973, June 29, 1906.

41. Preliminary lists of organic remains from the Chazy, Black River, Trenton, and Pleistocene formations comprised within the area of the Pembroke sheet (no. 122).—Geol. Survey of Canada, Appendix to Ellis's Report on the Geology and Natural Resources of the northwest quarter-sheet, no. 122, pp. 47-71, 1907.

42. Bibliography of Canadian geology and palæontology for the year 1906.—Canada, Roy. Soc., Proc. and Trans., 3d ser., vol. 1, sect. 4, pp. 143-156, 1907.

43. Memorial of A. R. C. Selwyn.—Abstract: Science, new ser., vol. 25, pp. 763-764, May 17, 1907.

**Ami, Henry M., and Wilson, W. J.**

44. Report of the geological branch of the Ottawa Field-Naturalists' Club for 1905-6.—Ottawa Naturalist, vol. 19, no. 11, pp. 209-214, February, 1906.

Contains various notes on the geology and paleontology of Ontario.

**Anderson, G. E.**

45. Studies in the development of certain Paleozoic corals.—Jour. Geology, vol. 15, no. 1, pp. 59-69, 8 figs., 1907.

46. Development of the inner wall in Paleozoic corals.—Abstract: Science, new ser., vol. 25, p. 184, February 1, 1907.

**Anderson, Robert.**

47. Earth flaws at the time of the San Francisco earthquake.—Abstract: Science, new ser., vol. 25, p. 769, May 17, 1907.

Diatomaceous deposits of northern Santa Barbara County, Cal.—See Arnold and Anderson, no. 65.

Geology and oil resources of the Santa Maria oil district, Santa Barbara County, Cal.—See Arnold and Anderson, no. 67.

Metamorphism by combustion of the hydrocarbons in the oil-bearing shale of California.—See Arnold and Anderson, no. 68.

Preliminary report on the Santa Maria oil district, Santa Barbara County, Cal.—See Arnold and Anderson, no. 66.

**Anderson, Tempest.**

48. Recent volcanic eruptions in the West Indies.—Congr. géol. intern., C. R. 10<sup>e</sup> sess., Mexico, 1906, pp. 735-737, 13 pls., 1907.

**Andersson, J. G.**

49. Solifluction, a component of subaerial denudation.—Jour. Geology, vol. 14, no. 2, pp. 91-112, 5 figs., 1906.

Defines the term solifluction and describes the process of denudation so designated.

**Angermann, Ernesto.**

50. Explicación del plano geológico de la región de San Pedro de Gallo, Estado de Durango [Mexico].—Mexico, Inst. Geol., Parergones, t. 2, no. 1, pp. 5-14, 1 pl. (geol. map), 1907.

Describes the topography, and the occurrence, character, and relations of Jurassic, Cretaceous, and Tertiary strata,

**Angermann, Ernesto**—Continued.

51. Sobre la geología de la Bufo, Mapimí, Estado de Durango [Mexico].—Mexico, Inst. Geol., Parergones, t. 2, no. 1, pp. 17-25, 1 pl., 1 fig., 1907.

Describes the geologic structure, and the occurrence and relations of Cretaceous, Tertiary, and Quaternary deposits.

52. Notas geológicas sobre el Cretaceo en el Estado de Colima [Mexico].—Mexico, Inst. Geol., Parergones, t. 2, no. 1, pp. 29-35, 1 pl., 1907.

Describes the occurrence and relations of Cretaceous strata in the State of Colima, Mexico.

Anonymous papers. See page 208.

**Arey, Melvin E.**

53. Geology of Black Hawk County [Iowa].—Iowa Geol. Survey, vol. 16, pp. 407-452, 1 pl., 4 figs., geol. map, 1906.

Describes the topography and drainage, the stratigraphy, including Devonian rocks and glacial deposits, and the economic products.

**Argall, Philip.**

54. Report on the zinc mines of the east and west Kootenays.—Canada, Dept. of the Interior, Mines Branch, Rept. of the Commission to investigate the zinc resources of British Columbia, pp. 147-252, 51 pls., 32 figs., 1906.

Includes notes on the character, occurrence, and geologic horizon of the zinc ores.

**Armington, Howard C., and Stotesbury, Harold W.**

55. The Yak mining, milling, and tunneling company [Leadville, Colo.].—Colorado School of Mines, Bull., vol. 4, no. 1, pp. 71-88, 10 figs., 1907.

Includes an account of the local geology.

**Arnold, Ralph.**

56. Geological reconnaissance of the coast of the Olympic Peninsula, Washington.—Geol. Soc. America, Bull., vol. 17, pp. 451-468, 4 pls., 4 figs., 1906.

Notes briefly the literature bearing on the region and describes its physical features, the character, occurrence, and relations of Tertiary and older formations, and the general geologic structure.

57. The Tertiary and Quaternary pectens of California.—U. S. Geol. Survey, Prof. Paper no. 47, 264 pp., 53 pls., 2 figs., 1906.

Gives an account—nomenclature, definition, localities, and faunal lists—of the Tertiary and Pleistocene formations of California and systematic descriptions of the pectens.

58. Coal in the Mount Diablo Range, Monterey County, Cal.—U. S. Geol. Survey, Bull. no. 285, pp. 223-225, 1 fig., 1906.

Describes the geologic structure of the range, the relations of the coal bed, and the properties of the coal.

59. The Salt Lake oil field near Los Angeles, Cal.—U. S. Geol. Survey, Bull. no. 285, pp. 357-361, 1 fig., 1906.

Describes the geologic formations and structure of the area, and the economic developments.

60. New and characteristic species of fossil mollusks from the oil-bearing Tertiary formations of southern California.—U. S. Nat. Mus., Proc., vol. 32, pp. 525-546, 14 pls., June 15, 1907.

61. Dome structure in conglomerate.—Jour. Geology, vol. 15, no. 6, pp. 560-570, 8 figs., 1907.

Describes the structure of domes in conglomerate near Pasadena, Cal., and discusses the origin of dome structure.

62. Fossils of the oil-bearing formations of southern California.—U. S. Geol. Survey, Bull. no. 309, pp. 219-256, 17 pls., 1907.

Gives figures of characteristic species of fossils, chiefly Pelecypoda and Gastropoda from Tertiary horizons of southern California.



**Arnold, Ralph**—Continued.

63. Geology and oil resources of the Summerland district, Santa Barbara County, Cal.—U. S. Geol. Survey, Bull. no. 321, 93 pp., 17 pls., 3 figs., 1907.

64. The Santa Maria oil district, California.—Abstract: Science, new ser., vol. 25, p. 825, May 24, 1907.

The Santa Clara Valley, Puente Hills, and Los Angeles oil districts, southern California.—See Eldridge and Arnold, no. 779.

**Arnold, Ralph, and Anderson, Robert.**

65. Diatomaceous deposits of northern Santa Barbara County, Cal.—U. S. Geol. Survey, Bull. no. 315, pp. 438-447, 1907.

66. Preliminary report on the Santa Maria oil district, Santa Barbara County, Cal.—U. S. Geol. Survey, Bull. no. 317, 69 pp., 2 pls., 1 fig., 1907.

Describes the stratigraphy and structural conditions of the field and the economic developments.

67. Geology and oil resources of the Santa Maria oil district, Santa Barbara County, Cal.—U. S. Geol. Survey, Bull. no. 322, 161 pp., 26 pls., 1907.

68. Metamorphism by combustion of the hydrocarbons in the oil-bearing shale of California.—Jour. Geology, vol. 15, no. 8, pp. 750-758, 2 figs., 1907.

**Ashley, George Hall.**

69. Cannel coal in the United States.—Min. World, vol. 23, pp. 90-92, 381-383, 8 figs., 1905.

70. An area of faulting in central Pennsylvania.—Abstract: Science, new ser., vol. 23, p. 33, January 5, 1906.

71. Clearfield coal field, Pennsylvania.—U. S. Geol. Survey, Bull. no. 285, pp. 271-275, 1 fig., 1906.

Describes the geologic structure of the field and the character and occurrence of the coal beds.

72. Notes on clays and shales in central Pennsylvania.—U. S. Geol. Survey, Bull. no. 285, pp. 442-444, 1906.

Gives a general description of the clays and shales of the region and particularly of the flint-clay deposits.

73. The geological prelude to the San Francisco earthquake.—Pop. Sci. Monthly, vol. 69, no. 1, pp. 69-75, 6 figs., July, 1906.

Gives an account of the geologic structure and geologic history of California.

74. The maximum deposition of coal in the Appalachian coal field.—Econ. Geology, vol. 1, no. 8, pp. 788-793, 1906.

Gives data regarding the thickness of coal seams in various Appalachian fields, with the view of determining the time required for the formation of the coal beds.

75. The maximum rate of deposition of coals.—Econ. Geology, vol. 2, no. 1, pp. 34-47, 5 figs., 1907.

From the study of peat bogs and field study of coal basins endeavors to determine the rate of accumulation of coal.

76. Were the Appalachian and eastern interior coal fields ever connected?—Econ. Geology, vol. 2, no. 7, pp. 659-666, 1907.

The Punxsutawney and Glen Campbell coal fields of Indiana and Jefferson counties, Pa.—See Peck and Ashley, no. 1888.

Correlation of coals.—See White and Ashley, no. 2549.

**Ashley, George Hall, and Glenn, Leonidas Chalmers.**

77. Geology and mineral resources of part of the Cumberland Gap coal field, Kentucky.—U. S. Geol. Survey, Prof. Paper no. 49, 239 pp., 40 pls., 13 figs., 1906.

Describes the physiography, stratigraphy, and geological structure of the region, and in detail the occurrence, character, geological relations, and correlations of the coal seams.

**Ashworth, James.**

78. Notes on the Crows Nest coal field, British Columbia.—Manchester Geol. and Min. Soc., Trans., vol. 29, pt. 3, pp. 78-83, 1905; Can. Min. Rev., vol. 25, no. 5, pp. 165-167, December, 1905; Eng. and Min. Jour., vol. 81, pp. 711-712, April 14, 1906.

Gives notes upon the character of the coal field and upon the rock slide at Frank, Alberta.

**Atkin, Austin J. R.**

79. Some further considerations on the genesis of the gold deposits of Barkerville, British Columbia, and vicinity.—Geol. Mag., dec. 5, vol. 3, no. 11, pp. 514-516, 1 fig., November, 1906.

Discusses briefly the character, occurrence, and origin of these deposits.

**Atwood, Wallace W.**

80. Red Mountain, Arizona: a dissected volcanic cone.—Jour. Geology, vol. 14, no. 2, pp. 138-146, 6 figs., 1906.

Describes the volcanic material of which the cone consists, the relations of the deposits to one another, and the physiographic features and geologic history of the cone.

81. The glaciation of the Uinta Mountains.—Jour. Geology, vol. 15, no. 8, pp. 790-804, 4 figs., 1907.

**Aubury, Lewis E.**

82. Report of the State mineralogist [California].—California State Min. Bur., Rept. of Board of Trustees, pp. 13-17, 1902.

An administrative report.

83. Report of the State mineralogist [California].—California State Min. Bur., Rept. of Board of Trustees, pp. 9-14, 1904.

An administrative report.

84. Report of the State mineralogist [California].—California State Min. Bur., Rept. of Board of Trustees, pp. 8-19, 1906.

An administrative report.

85. The copper resources of California.—California State Min. Bur., Bull. no. 23, 282 pp., pls., figs., maps, 1902.

86. The quicksilver resources of California.—California State Min. Bur., Bull. no. 27, 273 pp., 50 pls., 94 figs., 8 maps, 1903.

87. The structural and industrial materials of California.—California State Min. Bur., Bull. no. 38, pp. 13-378, 149 figs., 1906.

**Ayres, W. S.**

88. Deutschman's cave, near Banff, British Columbia, Canada.—Am. Inst. Min. Eng., Bi-Mo. Bull., no. 13, pp. 93-112, 17 figs., January, 1907.

Describes the location, the character of the rocks in which it has been cut, the mode of its formation, and various features of the cave.

89. Report on the exploration of Deutschman cave [British Columbia].—Canada, Dept. of the Interior, Rept. Surveyor-General for 1906, pp. 117-120, 1907.

90. Supplementary report on the additional exploration of Deutschman cave [British Columbia].—Canada, Dept. of the Interior, Rept. Surveyor-General for 1906, pp. 121-126, 1 pl., 1907.

**Babcock, E. J.**

91. The uses and value of North Dakota clays.—North Dakota State Geol. Survey, 4th Bienn. Rept., pp. 191-243, 1 pl., 1906.

Clay and its properties, with special reference to North Dakota clays.—See Clapp and Babcock, no. 471.

**Babcock, E. J., and Clapp, C. H.**

92. Economic geology of North Dakota clays.—North Dakota State Geol. Survey, 4th Bienn. Rept., pp. 95-189, 8 pls., 1906.

**Bagg, Rufus M., jr.**

93. The minerals of Maguarichic [Mexico].—Eng. and Min. Jour., vol. 80, pp. 2-3, 4 figs., July 6, 1905.

Gives notes on the geology of the region, and the occurrence and character of selenite, fluorite, and calcite crystals.

94. Fault breccia veins in the Sierra Madre [Mexico].—Min. and Sci. Press, vol. 92, p. 125, 4 figs., February 24, 1906.

Discusses the origin of these mineral-bearing lodes.

**Bailey, Gilbert E.**

95. The saline deposits of California.—California State Min. Bur., Bull. no. 24, 216 pp., pls., figs., maps, 1902.

96. The desert: its resources, water supply, and development.—Min. World, vol. 23, no. 17, pp. 471-473, map, October 28, 1905.

Describes the physical features of the desert region of southern California, Nevada, and Arizona.

97. The borax deposits of California.—Min. World, vol. 24, no. 1, pp. 4-5, 7 figs., January 6, 1906.

**Bailey, L. W.**

98. The gypsum deposits of New Brunswick.—Canada, Roy. Soc., Proc. and Trans., 2d ser., vol. 12, sec. 4, pp. 3-14, 7 pls., 1906. Abstract: Science, new ser., vol. 23, pp. 971-972, June 29, 1906.

Describes the geologic occurrence and relations of the gypsum beds of New Brunswick, particularly those in the vicinity of Hillsborough, and discusses the origin of the gypsum deposits.

**Bain, H. Foster.**

99. Zinc and lead deposits of the upper Mississippi Valley.—U. S. Geol. Survey, Bull. no. 294, 155 pp., 16 pls., 45 figs., 1906; Wisconsin Geol. and Nat. Hist. Survey, Bull. no. 19, 155 pp., 45 figs., 18 pls. (in atlas), 1906.

Gives a historical sketch of the development of the field, describes the topography, stratigraphy, and geologic structure, the character, occurrence, and relations of the ore deposits, and the mining developments, and discusses the origin of the ores.

100. [The coals of Illinois].—Illinois State Geol. Survey, Bull. no. 3, pp. 9-19, 1 pl., 1906.

Gives various data regarding the coal fields of Illinois. Includes a geologic map showing the distribution of the coal measures.

101. A Nevada zinc deposit.—U. S. Geol. Survey, Bull. no. 285, pp. 166-169, 1906.

Describes the geologic structure of Spring Mountains, and the character and occurrence of the ore bodies, and discusses the origin of the ores.

102. The southeastern Illinois oil field.—Min. and Sci. Press, vol. 92, p. 326, May 19, 1906.

Describes the occurrence and character of oil in this area.

103. A persistent error.—Science, new ser., vol. 23, p. 919, June 15, 1906.

Calls attention to the misuse of the terms "Des Moines" and "Missourian" applied to coal measures of the western interior States.

104. Sedi-genetic and igneo-genetic ores.—Econ. Geology, vol. 1, no. 4, pp. 331-339, 1906.

Presents a classification of the metal production of the United States according to the mode of concentration of the ores, with a discussion of the data used.

**Bain, H. Foster**—Continued.

105. What should appear in the report of a state geologist?—*Econ. Geology*, vol. 1, no. 5, pp. 484-487, no. 7, pp. 702-705, 1906.

106. Some relations of paleogeography to ore deposition in the Mississippi Valley.—*Congr. géol. intern., C. R. 10<sup>e</sup> sess.*, Mexico, 1906, pp. 483-499, 1907. *Econ. Geology*, vol. 2, no. 2, pp. 128-144, 1907.

Discusses concentration of metals in sedimentary rocks, and more especially the concentration of zinc and lead ores of the Mississippi Valley as affected by geographic conditions prevailing during Paleozoic sedimentation.

107. [Review of] Special report on lead and zinc, by E. Haworth and others (Kansas Univ. Geol. Survey, vol. 8).—*Econ. Geology*, vol. 2, no. 2, pp. 186-192, 1907.

108. The work of the [Illinois] State Geological Survey.—*Western Soc. Engrs., Jour.*, vol. 12, pp. 233-239, April, 1907; *Illinois Soc. Engrs. and Surveyors*, 22d Ann. Rept., pp. 51-56, 1907.

109. Petroleum in Illinois.—*Eng. and Min. Jour.*, vol. 83, pp. 755-756, 2 figs., April 20, 1907.

110. Administrative report for 1906.—*Illinois State Geol. Survey, Bull.* no. 4, pp. 9-35, 1 pl., 1907. [Also issued separately.]

Includes notes on economic resources.

111. Analysis of certain silica deposits.—*Illinois State Geol. Survey, Bull.* no. 4, pp. 185-186, 1907.

112. Contributions to the study of coal.—*Illinois State Geol. Survey, Bull.* no. 4, pp. 187-188, 1907.

113. The mineral industry in 1906 [Illinois].—*Illinois State Geol. Survey, Bull.* no. 4, pp. 245-246, 1907.

The production in the United States in 1905 of zinc and lead ores.—See no. 2418.

**Baker, H. P.**

114. The holding and reclamation of sand dunes and sand wastes by tree planting.—*Iowa Acad. Sci., Proc.*, vol. 13, pp. 209-214, 1906.

Describes the origin of dunes.

**Baker, J. Willard.**

115. Monograph on meteorites.—*Mineral Collector*, vol. 12, no. 6, pp. 81-87, no. 7, pp. 97-103, 1905.

**Baker, M. B.**

116. Clay and the clay industry of Ontario.—*Ontario, Bureau of Mines, Rept.* 1906, vol. 15, pt. 2, 127 pp., 71 figs., 1906.

**Baldacci, L.**

117. Il giacimento solfifero della Louisiana. [The sulphur deposits of Louisiana.]—*Italia, Ministero di Agricoltura, Industria e Commercio, Pubblicazioni del Corpo reale delle Miniere*, Roma, Tipografia Nazionale di G. Bertero, 1906. 43 pp., 9 pls.

**Baldwin, A. L.**

The earth movements in the California earthquake of 1906.—See Hayford and Baldwin, no. 1114.

**Ball, Sydney H.**

118. Pre-Cambrian rocks of the Georgetown quadrangle, Colorado.—*Am. Jour. Sci.*, 4th ser., vol. 21, pp. 371-389, May, 1906.

Describes the topography and general geology, and the occurrence, character, and relations of the pre-Cambrian formations.

Ball, Sydney H.—Continued.

119. Notes on ore deposits of southwestern Nevada and eastern California.—U. S. Geol. Survey, Bull. no. 285, pp. 53-73, 1 fig., 1906.

Describes the general geology, the occurrence and character of gold and silver ores, and the mining developments.

120. A geologic reconnaissance in southwestern Nevada and eastern California.—U. S. Geol. Survey, Bull. no. 308, 218 pp., 3 pls., 17 figs., 1907.

Describes the general stratigraphy of the area examined, the topography, structure, and stratified and igneous rocks of the various ranges, with notes on the character and occurrence of the economic minerals.

121. Copper deposits of the Hartville uplift, Wyoming.—U. S. Geol. Survey, Bull. no. 315, pp. 93-107, 1907.

122. The Hartville iron-ore range, Wyoming.—U. S. Geol. Survey, Bull. no. 315, pp. 190-205, 1 fig., 1907.

Describes the stratigraphy and geologic structure of the area, and the occurrence and origin of the iron ores.

123. Titaniferous iron ore of Iron Mountain, Wyoming.—U. S. Geol. Survey, Bull. no. 315, pp. 206-212, 1907.

124. Portland cement materials in eastern Wyoming.—U. S. Geol. Survey, Bull. no. 315, pp. 232-244, 2 figs., 1907.

125. Mica in the Hartville uplift, Wyoming.—U. S. Geol. Survey, Bull. no. 315, pp. 423-425, 1907.

126. Graphite in the Haystack Hills, Laramie County, Wyoming.—U. S. Geol. Survey, Bull. no. 315, pp. 426-428, 1907.

Bancroft, George J.

127. The formation and enrichment of ore-bearing veins.—Am. Inst. Min. Eng., Bi-Mo. Bull., no. 15, pp. 499-522, 1907.

128. Ore deposition.—Min. and Sci. Press, vol. 95, pp. 580-581, November 9, 1907.

Barbour, Erwin Hinckley.

129. Notice of a new fossil mammal from Sioux County, Nebraska.—Nebraska Geol. Survey, vol. 2, pt. 3, 4 pp., 1 pl., 1905.

Describes *Syndyoceras cooki* n. gen. and n. sp. from the Loup Fork beds at Agate, Nebraska.

130. Notice of a new fossil rhinoceros from Sioux County, Nebraska.—Nebraska Geol. Survey, vol. 2, pt. 4, pp. 311-318, 5 figs., 1906.

Describes *Diceratherium arikareense* from the Loup Fork beds.

131. Evidence of loess man in Nebraska.—Nebraska Geol. Survey, vol. 2, pt. 6, pp. 329-348, 16 figs., 1907.

132. Report on the Honey Creek coal mine.—Nebraska Geol. Survey, vol. 2, pt. 7, pp. 349-364, 7 figs., 1907.

133. Biennial report.—Nebraska Geol. Survey, vol. 2, pt. 8, pp. 365-387, 1907. An administrative report.

134. Report of the tenth geological expedition of Hon. Charles H. Morrill, season of 1905.—Science, new ser., vol. 23, pp. 114-115, January 19, 1906.

135. The skull of *Syndyoceras*.—Abstract: Science, new ser., vol. 23, pp. 288-289, February 23, 1906; Am. Assoc. Adv. Sci., Proc., vol. 55, pp. 378, 1906.

136. The skulls of *Syndyoceras* and *Protoceras*.—Abstract: Science, new ser., vol. 23, p. 623, April 20, 1906.

**Barbour, Erwin Hinckley**—Continued.

137. A workable bed of coal in Nebraska.—*Science*, new ser., vol. 24, pp. 51-52, July 13, 1906.

Notes the discovery of workable coal near Peru, Nebr., its character, and other occurrences of coal in Nebraska.

138. Notice of a new Miocene rhinoceros, *Diceratherium arikarense*.—*Science*, new ser., vol. 24, pp. 780-781, 2 figs., December 14, 1906.

139. Report on the geological expedition of Hon. Charles H. Morrill. Season of 1906.—*Science*, new ser., vol. 25, pp. 73-74, January 11, 1907.

140. Evidence of man in the loess of Nebraska.—*Science*, new ser., vol. 25, pp. 110-112, January 18, 1907.

Announces the discovery of human remains in undisturbed loess, detailing the circumstances and conditions of preservation.

141. Prehistoric man in Nebraska.—*Putnam's Monthly*, pp. 413-415, 502-503, 3 figs., January, 1907.

Describes the finding of human remains in undisturbed loess deposits.

**Barbour, Erwin Hinckley, and Ward, Henry Baldwin.**

142. Preliminary report on the primitive man of Nebraska.—*Nebraska Geol. Survey*, vol. 2, pt. 5, pp. 317-327, 4 figs., 1906.

**Barker, F. L.**

143. Structural geology at Leadville [Colorado].—*Mines and Minerals*, vol. 28, no. 5, pp. 220-222, 3 figs., December, 1907.

Describes the geological relations and occurrence of the ore deposits.

**Barlow, Alfred Ernest.**

144. Report on some of the undeveloped zinc deposits of British Columbia.—Canada, Dept. of the Interior, Mines Branch, Report of the Commission to investigate the zinc resources of British Columbia, pp. 273-293, 4 pls., 1906.

Includes notes on the geology of the area examined.

145. On the Quebec side of Lake Timiskaming.—Canada, Geol. Survey, Summ. Rept. for 1906, pp. 113-118, 1906.

Gives an account of the geology of the region.

146. On the nickel deposits of Webster, western North Carolina.—*Canadian Min. Inst., Jour.*, vol. 9, pp. 303-316, 1 pl. (map), 1906.

Describes the occurrence of the ores and their geological relations and origin.

147. On the origin and relations of the nickel and copper deposits of Sudbury, Ontario, Canada.—*Econ. Geology*, vol. 1, no. 5, pp. 454-466; no. 6, pp. 545-553, 1906.

Gives a historical résumé of the literature, and describes the character of the nickel-bearing eruptive rock, and the composition and mode of occurrence of the ore bodies.

Report of a special committee on the correlation of the pre-Cambrian rocks of the Adirondack Mountains, the "original Laurentian area" of Canada, and eastern Ontario.—See Adams and others, no. 13.

**Barrell, Joseph.**

148. Relative geological importance of continental, littoral, and marine sedimentation.—*Jour. Geology*, vol. 14, pp. 316-356, 430-457, 524-568, 10 figs., 1906.

Discusses the conditions under which continental, littoral, and marine deposits are formed and the criteria by which they may be discriminated, and applies these considerations to geologic history, particularly of pre-Paleozoic and Paleozoic sedimentation.

Barrell, Joseph—Continued.

149. Geology of the Marysville mining district, Montana: a study of igneous intrusion and contact metamorphism.—U. S. Geol. Survey, Prof. Paper no. 57, 178 pp., 16 pls., 9 figs., 1907.

Describes Algonkian and Tertiary deposits and igneous rocks and the geologic structure of the region, and discusses the contact and intrusive phenomena.

150. Origin and significance of the Mauch Chunk shale.—Geol. Soc. America, Bull., vol. 18, pp. 449-476, 4 pls., 1 fig., December, 1907. Abstract: Science, new ser., vol. 25, p. 766, May 17, 1907.

Describes the distribution and character of the Mauch Chunk formation and discusses the mode of formation of the shale.

151. Relations between climate and river deposits.—Abstract: Science, new ser., vol. 25, p. 766, May 17, 1907.

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152. Coon Mountain and its crater [Arizona].—Philadelphia Acad. Nat. Sci., Proc., vol. 57, pt. 3, pp. 861-886, 1906.

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Barringer, Daniel Moreau, and Tilghman, B. C.

153. The geology of Coon Butte, Arizona.—Abstract: Science, new ser., vol. 24, pp. 370-371, September 21, 1906; Am. Assoc. Adv. Sci., Proc., vol. 56-57, p. 271, 1907.

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154. Vulcanism.—Science, new ser., vol. 24, pp. 400-403, September 28, 1906.

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155. Note on volcanic activity.—Am. Jour. Sci., 4th ser., vol. 24, pp. 483-484, December, 1907.

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156. A study of the James types of Ordovician and Silurian Bryozoa.—U. S. Nat. Mus., Proc., vol. 30, pp. 1-66, 7 pls., 1906.

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157. The bryozoan fauna of the Rochester shale.—U. S. Geol. Survey, Bull. no. 292, 136 pp., 31 pls., 1906.

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158. Cement and cement materials [of Virginia].—In Watson, T. L., Mineral Resources of Virginia, pp. 86-167, 10 pls., 14 figs., 1907.

New American Paleozoic Ostracoda. Notes and descriptions of upper Carboniferous genera and species.—See Ulrich and Bassler, no. 2412.

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159. Some unusual rocks from Maine.—Jour. Geology, vol. 14, no. 3, pp. 173-187, 2 figs., 1906.

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160. The lime industry of Knox County, Me.—U. S. Geol. Survey, Bull. no. 285, pp. 393-400, 3 figs., 1906.

Describes the distribution, utilization, general character, and mode of occurrence of the limestones of Knox County, Me.

161. Clays of the Penobscot Bay region, Maine.—U. S. Geol. Survey, Bull. no. 285, pp. 428-431, 1906.

Describes the distribution, age, origin, utilization, and composition.

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162. Feldspar and quartz deposits of Maine.—U. S. Geol. Survey, Bull. no. 315, pp. 383-393, 1907.

163. Feldspar and quartz deposits of southeastern New York.—U. S. Geol. Survey, Bull. no. 315, pp. 394-399, 1907.

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The production in the United States in 1906 of quartz (flint) and feldspar.—See no. 2419.

**Bateson, Charles E. W.**

164. The Mojave mining district of California.—Am. Inst. Min. Eng., Bi-Mo. Bull. no. 7, pp. 65-82, 9 figs., January, 1906; Trans., vol. 37, pp. 160-177, 9 figs., 1907.

Describes the topography of the region, the rocks and their origin, and the vein system.

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A brief account of his scientific work.

166. The species of *Botryocrinus*.—Ottawa Naturalist, vol. 20, no. 5, pp. 93-104, August, 1906.

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167. Magnetograph records of earthquakes with special reference to the San Francisco earthquake, April 18, 1906.—Terrestrial Magnetism and Atmospheric Electricity, vol. 11, no. 3, pp. 135-144, 2 figs., September, 1906.

168. Seismograph and magnetograph records of the San Francisco earthquake, April 18, 1906.—Pop. Sci. Monthly, vol. 69, no. 2, pp. 116-127, 2 figs., August, 1906.

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171. Present problems of geophysics.—Congress of Arts and Science, Universal Exposition, St. Louis, 1904, vol. 4, pp. 508-522, 1906.

172. Methods of igneous intrusion.—Abstract: Science, new ser., vol. 25, p. 622, April 19, 1907.

173. Current theories of slaty cleavage.—Am. Jour. Sci., 4th ser., vol. 24, pp. 1-17, 6 figs., July, 1907. Abstract: Science, new ser., vol. 25, pp. 967-968, June 21, 1907.

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174. Fauna of the Salem limestone: Foraminifera and Anthozoa.—Indiana, Dept. Geol. and Nat. Res., 30th Ann. Rept., pp. 1201-1218, illus., 1906.

175. Fauna of the Salem limestone: Echinoderma.—Indiana, Dept. Geol. and Nat. Res., 30th Ann. Rept., pp. 1243-1270, illus., 1906.

176. Fauna of the Salem limestone: Vermes.—Indiana, Dept. Geol. and Nat. Res., 30th Ann. Rept., pp. 1271-1273, illus., 1906.

177. Fauna of the Salem limestone: Brachlopoda.—Indiana, Dept. Geol. and Nat. Res., 30th Ann. Rept., pp. 1297-1322, illus., 1906.



**Beede, Joshua W.**—Continued.

178. Fauna of the Salem limestone: Pelecypoda.—Indiana, Dept. Geol. and Nat. Res., 30th Ann. Rept., pp. 1323-1334, illus., 1906.

179. A correction.—Science, new ser., vol. 24, p. 594, November 9, 1906.

Calls attention to a misstatement in his paper on the Foraminifera and Anthozoa printed in the 30th Annual Report of the Department of Geology and Natural Resources of Indiana.

180. Invertebrate paleontology of the upper Permian Red Beds of Oklahoma and the Panhandle of Texas.—Kansas Univ., Sci. Bull., vol. 4, no. 3, pp. 113-171, 4 pls., 2 figs., March, 1907.

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Fauna of the Salem limestone: Introduction.—See Cumings and Beede, no. 301.

**Beede, Joshua W., and Rogers, Austin F.**

181. Coal measures faunal studies, IV. Upper coal measures, Neosho River section.—Kansas Univ., Sci. Bull., vol. 3, no. 10, pp. 375-388, 1906.

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182. [Iron ores of] Martin County [Indiana].—Indiana, Dept. Geol. and Nat. Res., 31st Ann. Rept., pp. 383-424, 1907.

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183. The north Laramie Peak copper district in Converse, Albany, and Laramie counties, Wyoming. Cheyenne, Wyo., July 1, 1904. 16 pp.

Gives an account of the geology, copper-ore deposits, and mining developments.

184. A brief review of the South Pass gold district, Fremont County, Wyo. Second edition, July 15, 1904. 16 pp.

Includes a brief account of the geology of the district.

185. Mining in the Grand Encampment copper district, Carbon and Albany counties, Wyoming. Cheyenne, September 1, 1905. 32 pp., 1 fig.

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186. Mineral and allied resources of Albany County, Wyoming. Laramie, Wyoming, 1906. 80 pp., illus.

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187. The mines of Bolanos, old Mexico.—California Jour. Tech., vol. 10, no. 4, pp. 11-14, November, 1907.

**Bell, J. J.**

188. The Cassiar coal fields in British Columbia.—Eng. and Min. Jour., vol. 83, p. 1007, 3 figs., May 25, 1907.

**Bell, J. M.**

189. The possible granitization of acidic lower Huronian schists on the north shore of Lake Superior.—Jour. Geology, vol. 14, no. 3, pp. 233-242, 1906.

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**Bell, Robert.**

190. Summary report of the Geological Survey Department of Canada for the calendar year 1905. Ottawa, 1906. 144 pp., 2 maps, 3 pls.

Outlines the work of the survey during the year 1905. Includes various data relating to the geology of Canada. [The reports by various members of the staff have been listed under the individual authors.]

**Bell, Robert**—Continued.

**191.** [Report on] the Cobalt mining district.—Canada, Geol. Survey, Summ. Rept. for 1905, pp. 94-104, 3 pls., 1906; Canadian Min. Rev., vol. 27, no. 4, pp. 116-124, October, 1906.

Gives an account of the general geology of the area, the occurrence, and character of the silver ores, and the mining operations.

**192.** Cobalt district and northward.—Canada, Geol. Survey, Summ. Rept. for 1906, pp. 110-112, 1906.

Gives notes on the occurrence of the ores containing silver, nickel, and cobalt.

**193.** The occurrence of diamonds in the drift of some of the northern States.—Eng. and Min. Jour., vol. 82, p. 819, November 3, 1906; Canadian Min. Inst., Jour., vol. 9, pp. 124-127, 1906.

Discusses the possible sources of the diamonds found in drift and the movement of the drift.

**194.** The Cobalt mining district.—Canadian Min. Jour., vol. 28, no. 10 (new ser., vol. 1, no. 8), pp. 246-248, July 1, 1907.

Describes the geology of the Cobalt district, Ontario, and the character and occurrence of the ore deposits.

**Bell, Robert N.**

**195.** Seventh annual report of the mining industry of Idaho for the year 1905.—Idaho, Rept. State Inspector of Mines, 1905, 149 pp., illus. [1906].

Contains notes on the character, occurrence, and geologic relations of ore deposits.

**196.** Eighth annual report of the mining industry of Idaho for the year 1906. 175 pp., illus., 1907.

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**197.** South Mountain, Idaho.—Eng. and Min. Jour., vol. 83, pp. 283-284, 2 figs., February 9, 1907.

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**198.** Sapphires in Idaho.—Min. World, vol. 26, p. 449, April 6, 1907.

**199.** The gold of the Snake River [Idaho].—Min. and Sci. Press, vol. 94, pp. 542-543, 3 figs., April 27, 1907.

**Bement, A.**

**200.** The necessity for a geological survey of Illinois.—Western Soc. Eng., Jour., vol. 10, no. 2, pp. 131-166, April, 1905.

**201.** Distribution of the coal beds of the State [of Illinois].—Illinois State Geol. Survey, Bull. no. 3, pp. 19-25, 1 pl., 1906.

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**202.** The Peabody atlas. Shipping mines and coal railroads of the central commercial district of the United States, accompanied by chemical, geological, and engineering data. Chicago, published by Peabody Coal Company, 1906. 149 pp., maps and illustrations.

Contains data regarding the coal fields of the United States, and the occurrence, character, and composition of the coals.

**Benge, Elmer, and Wherry, Edgar T.**

**203.** Directory of the mineral localities in and around Philadelphia.—Mineral Collector, vol. 12, pp. 1-3, 49-51, 65-67, 89-91, 105-107, 119-121, 139-142; vol. 13, pp. 7-10, 21-24, 41-43, 60-62, 65-67, 91-93, 109-111, 129-132, 151-154, 1906; vol. 13, pp. 161-163, 183-184, 1907; vol. 14, pp. 5-7, 25-27, 42, 1907.

**Bensley, B. Arthur.**

**204.** The homologies of the styler cusps in the upper molars of the Didelphidae.—Toronto Univ., Studies, Biological Series no. 5, pp. 1-13, [147-159], 1906.

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205. Paleogeography of Saint Peter time.—Geol. Soc. America, Bull., vol. 17, pp. 229-250, 1 pl., 6 figs., 1906.

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206. Notes on the preglacial channels of the lower Hudson Valley as revealed by recent borings.—Abstract: Science, new ser., vol. 24, p. 691, November 30, 1906.

207. Structural and stratigraphic features of the basal gneisses of the Highlands.—New York State Mus., Bull. 107, pp. 361-378, 1 pl., 1 fig., 1907.

208. Interpretation of certain interglacial clays and their bearings upon measurement of geologic time.—Abstract: New York Acad. Sci., Annals, vol. 17, pt. 3, p. 574, 1907.

209. Paleogeography of North America during mid-Ordovician time (illustrated by maps, diagrams, and lantern views).—Abstract: New York Acad. Sci., Annals, vol. 17, pt. 3, p. 591, 1907.

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211. A note on mid-Cretaceous geography.—Science, new ser., vol. 23, pp. 509-510, March 30, 1906.

212. Fossil plants along the Chesapeake and Delaware canal.—New York Bot. Garden, Jour., vol. 7, pp. 5-7, 1906.

Describes a locality in Delaware from which Cretaceous fossil plants have been collected.

213. A brief sketch of fossil plants.—New Jersey Geol. Survey, Ann. Rept. State Geol. for 1905, pp. 97-133, 8 figs., 1906.

214. The flora of the Cliffwood clays.—New Jersey Geol. Survey, Ann. Rept. State Geol. for 1905, pp. 135-172, 8 pls., 1906.

Discusses the occurrence, character, and relations of the Magothy formation in which the flora considered is found, gives lists of species from different localities and descriptions of new species.

215. Living and fossil species of *Comptonia*.—Am. Naturalist, vol. 40, pp. 485-524, 4 pls., July, 1906.

Discusses the geologic succession of forms of *Comptonia* and its characters, and gives descriptions of the species with critical notes upon them.

216. Contributions to the Mesozoic flora of the Atlantic coastal plain. I.—Torrey Bot. Club, Bull., vol. 33, no. 3, pp. 163-182, 3 pls., March, 1906.

217. Pleistocene plants from Virginia.—Torreya, vol. 6, no. 5, pp. 88-90, May, 1906.

218. Leaf-rafts and fossil leaves.—Torreya, vol. 6, no. 12, pp. 246-248, 1 fig., December, 1906.

219. Coastal-plain amber.—Torreya, vol. 7, no. 1, pp. 4-6, January, 1907.

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220. A *Tilia* from the New Jersey Pleistocene.—Torreya, vol. 7, no. 4, pp. 80-81, April, 1907.

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222. Contributions to the Pleistocene flora of North Carolina.—*Jour. Geology*, vol. 15, no. 4, pp. 338-349, 1907.

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224. Paleobotanical notes.—*Johns Hopkins Univ., Circ.*, new ser., 1907, no. 7, pp. 79-82 [667-670], 1907.

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228. Les éruptions de la Montagne Pelée. Recit et observations d'un témoin.—*La Géographie*, t. 6, no. 3, pp. 133-141, 1 fig., 1902.

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229. Mineral production in Iowa in 1905.—*Iowa Geol. Survey*, vol. 16, pp. 17-36, 1906.

230. Supplementary report on Portland cement materials in Iowa.—*Iowa Geol. Survey, Bull.* no 3, 36 pp., 1 pl. (map), 1906.

Includes data regarding the geological formations which yield raw materials for cement manufacture and gives sections of strata shown in exposures.

231. Mineral production in Iowa in 1906.—*Iowa Geol. Survey*, vol. 17, pp. 11-25, 4 pls., 1907.

232. Physical tests of Iowa limes.—*Iowa Geol. Survey*, vol. 17, pp. 91-150, 18 pls., 1907.

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233. The materials and manufacture of Portland cement.—*Iowa Geol. Survey*, vol. 17, pp. 29-89, 1907.

234. The geology of the Iowa quarry products.—*Iowa Geol. Survey*, vol. 17, pp. 201-525, 26 pls., 38 figs., 1907.

**Bibbins, Arthur Barneveld.**

235. Additional evidence of tropical climate on the Middle Atlantic coast during the lower Cretaceous.—*Abstract: Science*, new ser., vol. 25, pp. 297-298, February 22, 1907.

Description of the Patuxent quadrangle.—See Shattuck, and others, no. 2193.

**Birge, E. A.**

236. Report of the director of the survey [Wisconsin].—*Wisconsin Geol. and Nat Hist. Survey, Fifth Bienn. Rept. of the Commissioners*, pp. 9-35, 1906.

Describes the work carried on by the survey, 1904-1906.

**Birkinbine, John.**

237. Iron ore reserves of the United States.—*Cassier's Mag.*, vol. 32, no. 2, pp. 99-105, 2 figs., June, 1907.

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**Blackwelder, Eliot.**

238. On the probable glacial origin of certain folded slates in southern Alaska.—*Jour. Geology*, vol. 15, no. 1, pp. 11-14, 1 fig., 1907.

Describes the position and lithologic characters of a shale or slate conglomerate near Yakutat Bay and discusses its age and mode of formation.

239. Glacial features of the Alaskan coast between Yakutat Bay and the Alsek River.—*Jour. Geology*, vol. 15, no. 5, pp. 415-433, 9 figs., 1907.

240. Reconnaissance of the Pacific coast from Yakutat to Alsek River.—Abstract: U. S. Geol. Survey, Bull. no. 314, pp. 82-88, 1907.

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**Blake, William P.**

Origin of orbicular and concretionary structure. *Am. Inst. Min. Eng., Trans.*, vol. 36, pp. 39-44, 1 pl., 1906 (*Bi-Mo. Bull.*, no. 4, pp. 677-682, 1905).—See Blake, 19, page 39 of Bulletin no. 301, U. S. Geol. Survey.

241. Origin of the depression known as Montezuma's Well, Arizona.—*Science*, new ser., vol. 24, p. 568, November 2, 1906.

242. The flanking detrital slopes of the mountains of the Southwest.—*Science*, new ser., vol. 25, pp. 975-978, June 21, 1907. Abstract: *Science*, new ser., vol. 25, p. 294, February 22, 1907.

Describes the character of these slopes in the Great Basin of Nevada and the Piedmont region of Arizona and discusses their origin.

**Blatchley, Raymond S.**

243. The Princeton petroleum field of Indiana.—*Indiana, Dept. Geol. and Nat. Res.*, 31st Ann. Rept., pp. 559-593, 3 figs., 1 map, 1907.

**Blatchley, W. S.**

244. The Indiana of nature: Its evolution.—*Indiana Acad. Sci., Proc.* 1903, pp. 33-59, 6 figs., 1904.

Describes the geologic history of Indiana.

245. The petroleum industry of southeastern Illinois.—*Illinois State Geol. Survey, Bull.* no. 2, 109 pp., 6 pls., 3 figs., 1906.

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246. The geologic distribution of the road materials of Indiana.—*Indiana, Dept. Geol. and Nat. Res.*, 30th Ann. Rept., pp. 120-160, 1906.

Describes the origin and occurrence of gravel deposits and the occurrence and geologic horizon of limestones suitable for road-making materials.

247. The natural resources of Indiana.—In *Dryer's Studies in Indiana Geography*, pp. 61-71, 1907.—See no. 745.

248. The natural resources of the State of Indiana.—*Indiana, Dept. Geol. and Nat. Res.*, 31st Ann. Rept., pp. 13-72, 3 pls., 1907.

249. The petroleum industry in Indiana in 1906.—*Indiana, Dept. Geol. and Nat. Res.*, 31st Ann. Rept., pp. 429-558, 7 figs., 1 map, 1907.

Includes a general discussion on the occurrence and origin of petroleum and conditions of accumulation.

**Blatchley, W. S., and assistants.**

250. The roads and road materials of Indiana.—*Indiana, Dept. Geol. and Nat. Res.*, 30th Ann. Rept., pp. 17-1057, 25 pls., 59 figs. (outline maps), 1906.

Includes notes on the geologic occurrence of road-making materials.

**Böggild, O. B.**

251. On some minerals from Narsarsuk at Julianehaab, Greenland.—*Meddelelser om Grönland, Hefte 33*, pp. 97-120, 10 figs., 1907; *Mineral. and Geol. Mus., Copenhagen, Contr. to Mineral.*, no. 7, 1906.

Describes physical, crystallographic, and optical characters.

**Böhm, C. Richard.**

252. Monazite sand.—*Eng. and Min. Jour.*, vol. 81, p. 842, May 5, 1906.

Describes the occurrence in North Carolina and South Carolina.

[Boileau, John W.]

253. Coal fields of southwestern Pennsylvania, Washington and Greene counties. Fields of coking coal located in eastern Greene and southeastern Washington counties, Pa., owned and largely controlled by Mr. J. V. Thompson. Copyright, September, 1907, by John W. Boileau. 90 pp., map and illustrations.

Includes a description of the geologic structure of the area.

**Bonsteel, Jay A.**

254. The soils of St. Mary's County [Maryland].—*Maryland Geol. Survey, St. Mary's County*, pp. 125-146, 1907.

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255. The soils of Calvert County [Maryland].—*Maryland Geol. Survey, Calvert County*, pp. 135-167, 1907.

**Bordeaux, Albert.**

256. Les mines d'or de la Californie.—*Revue univ. des Mines*, 3<sup>e</sup> sér., t. 53, pp. 30-82, 245-307, 1901.

Includes an account of the occurrence of the ores.

**Böse, Emilio.**

257. Sobre algunas faunas terciarias de México.—*México, Inst. Geol., Bol.*, no. 22, 97 pp., 12 pls., 1906.

Describes Mollusca from Tertiary beds of Mexico.

258. La fauna de Moluscos del Senoniano de Cárdenas, San Luis Potosí [México].—*México, Inst. Geol., Bol.*, no. 24, 95 pp., 18 pls., 1906.

Discusses stratigraphic position and correlation of the beds from which the fauna described was derived, and gives systematic descriptions of the Mollusca.

259. Excursions à Chavarrillo, Santa Maria Tatetla, Vera Cruz, et Orizaba [México].—*X<sup>e</sup> Congr. géol. intern., Guide des Excursions, Mexico*, no. II, 11 pp., 1 pl., 1906.

Describes the geology of the country along the route traveled.

260. Excursions aux mines de soufre de la Sierra de Banderas [México].—*X<sup>e</sup> Congr. géol. intern., Guide des Excursions, Mexico*, no. XIX, 8 pp. 2 figs., 1906.

Describes the occurrence of sulphur deposits.

261. Excursion au Cerro de Muleros près ciudad Juarez (Chihuahua).—*X<sup>e</sup> Congr. géol. intern., Guide des Excursions, Mexico*, no. XX, 24 pp., 6 pls. (incl. geol. map and sections), 1906.

262. Excursion dans les environs de Parras [México].—*X<sup>e</sup> Congr. géol. intern., Guide des Excursions, Mexico*, no. XXIII, 16 pp., 6 pls. (incl. geol. map and sections).

263. Excursions dans les environs de Monterrey et Saltillo [México].—*X<sup>e</sup> Congr. géol. intern., Guide des Excursions, Mexico*, no. XXIX, 17 pp., 3 pls., 1906.

Describes the geology of the region.

**Böse, Emilio**—Continued.

**264.** De San Luis Potosí à Tampico [México].—X<sup>e</sup> Congr. géol. intern., Guide des Excursions, Mexico, no. XXX, 16 pp., 6 figs., 1906.

Describes the geology along the route of travel.

**265.** Excursion à l'Isthme de Tehuantepec.—X<sup>e</sup> Congr. géol. intern., Guide des Excursions, Mexico, no. XXXI, 40 pp., 1 pl., 1906.

An account of the geology of the region.

**266.** Nota preliminar sobre la fauna pliocénica de Santa María Tatetla, Ver.—Soc. Geol. Mexicana, Bol., t. 2, no. 2, pp. 51-64, 1906.

Gives an account of a Pliocene fauna from Santa María Tatetla, State of Vera Cruz, Mexico.

**267.** Sobre algunos fósiles pleistocénicos recogidos por el Sr. Dr. E. Angermann en la Baja California.—Mexico, Inst. Geol., Parergones, t. 2, no. 2, pp. 41-45, 1907.

Describes Pleistocene mollusks from Lower California referred to the genera *Peoten* and *Fasciolaria*.

**268.** Un appareil perfectionné pour la reproduction photographique des sutures d'ammonites et d'ambulacres des oursins.—Soc. cient. "Antonio Alzate," Mem. y Rev., t. 24, no. 12, pp. 467-475, 4 figs., June, 1907.

Describes a method for the photographic reproduction of the sutures of ammonites and similar structures.

**Böse, Emilio, and Vigier, Victor von.**

**269.** Sobre la aplicacion de la potasa caustica a la preparacion de fosiles.—Mexico, Inst. Geol., Parergones, t. 2, no. 2, pp. 49-59, 1907.

Describes the method of cleaning fossils by caustic potash and the chemical reactions of the process.

**Boule, Marcellin, and Thevenin, A.**

**270.** Types du Prodrome de Paléontologie stratigraphique universelle de D'Orbigny.—Ann. de Paléont., t. 1, fasc. 1-2, pp. 1-4 (97-101), fasc. 3, pp. 5-12 (165-172), 4 pls., 1906.

Includes figures of and remarks upon the types of fossils described by D'Orbigny from Cincinnati, Ohio, and from the Falls of the Ohio.

**Boutwell, John M.**

Genesis of the ore deposits at Bingham, Utah.—Am. Inst. Min. Eng., Trans., vol. 36, pp. 541-580, 13 figs., 1906 (Bi-Mo. Bull., no. 6, pp. 1153-1192, 1905).—See Boutwell, 14, page 43 of Bulletin no. 301, U. S. Geol. Survey.

**271.** Stratigraphy and structure of the Park City mining district, Utah.—Jour. Geology, vol. 15, no. 5, pp. 434-458, 1907.

Describes the general geology, the character, occurrence, and relations of Carboniferous, Triassic, and Jurassic strata, and the geologic structure.

The production in the United States in 1906 of lead and zinc, and of quicksilver.—See no. 2419.

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**272.** Notes on Quaternary Felidae from California.—California Univ., Dept. Geol., Bull., vol. 5, no. 10, pp. 155-170, 2 pls., 1907.

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329. Report on the mineral resources of Cuba in 1901.—Civil Report of Brigadier-General Leonard Wood, Military Governor of Cuba, January 1st to May 20th, 1902, vol. 5, pt. 2, 121 pp., 12 pls., [1902?].

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**Buckman, S. S.**

347. Brachiopod nomenclature.—*Science*, new ser., vol. 24, pp. 742-743, December 7, 1906.

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**Bullock, William Starr.**

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351. The Clinton or red ores of the Birmingham district, Alabama.—U. S. Geol. Survey, Bull. no. 315, pp. 130-151, 1907.

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**Burckhardt, Carlos.**

357. Géologie de la Sierra de Concepción del Oro [México].—X° Congr. géol. intern., Guide des Excursions, Mexico, no. XXIV, 24 pp., geol. map, 1906.

358. Géologie de la Sierra de Mazapil et Santa Rosa [México].—X° Congr. géol. intern., Guide des Excursions, Mexico, no. XXVI, 40 pp., 17 pls. (incl. 2 geol. maps), 1906.

359. La faune jurassique de Mazapil avec un appendice sur les fossiles du crétacique inférieur.—México, Inst. Geol., Bol. no. 23, 216 pp., 43 pls., 1906.

360. Sobre el descubrimiento del Trias marino en Zacatecas.—Soc. Geol. Mexicana, Bol., t. 2, pp. 43-45, 1906.

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361. Sobre las rocas fosforíticas de las Sierras de Mazapil y Concepción del Oro, Zacatecas.—México, Inst. Geol., Parergones, t. 2, no. 2, pp. 63-67, 1 pl., 1907.

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**Butts, Charles.**

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373. The northern part of the Cahaba coal field, Alabama.—*U. S. Geol. Survey, Bull.* no. 316, pp. 76-115, 2 pls., 1907.

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374. The possibilities of Salton Sea.—*Pop. Sci. Monthly*, vol. 70, no. 1, pp. 5-18, 20 figs., January, 1907.

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379. [Report on] the foothills of the Rocky Mountains south of the main line of the Canadian Pacific Railway.—*Canada, Geol. Survey, Summ. Rept.* for 1905, pp. 62-67, 1906.

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Cairnes, D. D.—Continued.

380. Explorations in a portion of the Yukon south of Whitehorse.—Canada, Geol. Survey, Summa. Rept. for 1906, pp. 22-30, 1906.

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381. Moose Mountain district of southern Alberta.—Canada, Geol. Survey, 55 pp., 3 pls., 2 maps, 1907.

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382. Recent developments in mining in the southern Yukon.—Canadian Min. Jour., vol. 28 (new ser., vol. 1), pp. 87-88, 121-122, 1907.

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Calderón, Salvador.

383. Sobre los fenomenos de las pegas.—México, Secretaría de Fomento, Bol., 2ª época, año 6, VI, no. 10, pp. 141-158, May, 1907; Congr. géol. intern., C. R. 10ª sess., Mexico, 1906, pp. 1187-1200, 1907.

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Calhoun, Fred. H. H.

384. The Montana lobe of the Keewatin ice sheet.—U. S. Geol. Survey, Prof. Paper no. 50, 62 pp., 7 pls., 31 figs., 1906.

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California State Earthquake Investigation Commission.—See Lawson and others, no. 1531.

California State Mining Bureau.

385. Register of mines and minerals, with map [of each of the following counties, issued separately]:

Amador County, by John B. Tregloan, 17 pp., 1903.

Butte County, by W. E. Thorne, 13 pp., 1903.

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Nevada County, by Charles E. Uren, 18 pp.

Placer County, by Ivan H. Parker, 21 pp., 1902.

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506. Ore deposits of the Joplin district.—Colorado Sci. Soc., Proc., vol. 8, pp. 199-220, 1906.

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507. The ore deposits of the Joplin region, Missouri.—Am. Inst. Min. Eng., Bi-Mo. Bull., no. 14, pp. 353-376, March, 1907.

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508. Notes on the geology of Currituck Banks [North Carolina].—Elisha Mitchell Sci. Soc., Jour., vol. 22, no. 1, pp. 17-19, 1906.

509. Autophytographs.—Abstract: Elisha Mitchell Sci. Soc., Jour., vol. 22, no. 3, p. 58, 1906.

Defines the term and records occurrences.

510. Rhætic flora of Moncure shales.—Abstract: Elisha Mitchell Sci. Soc., vol. 22, no. 3, p. 60, 1906.

Notes the occurrence of fossil plants in North Carolina.

511. Where the wind does the work.—Nat. Geog. Mag., vol. 17, no. 6, pp. 310-317, 10 figs., June, 1906; Elisha Mitchell Sci. Soc., Jour., vol. 22, no. 3, pp. 80-85, 1906.

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512. Notes on the geology of Core Bank, N. C.—Elisha Mitchell Sci. Soc., Jour., vol. 23, no. 1, pp. 26-28, May, 1907. Abstract: Science, new ser., vol. 25, p. 298, February 22, 1907.

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513. The publication of rejected names.—Science, new ser., vol. 17, p. 189, 1903.

Discusses the nomenclature of a fossil fruit from Vermont.

514. The origin of the horse.—Nature, vol. 70, pp. 53-54, 1904.

515. The snails of New Mexico and Arizona.—Nautilus, vol. 19, no. 6, pp. 68-71, October, 1905.

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516. A new fossil ant.—Entomological News, vol. 17, no. 1, pp. 27-28, January, 1906.

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517. A new Tertiary *Planorbis*.—Nautilus, vol. 19, no. 9, pp. 100-101, January, 1906.

518. Fossil plants from Florissant, Colorado.—Torrey Bot. Club, Bull., vol. 33, no. 5, pp. 307-312, 6 figs., May, 1906.

519. A fossil water-bug.—Canadian Entomologist, vol. 38, no. 6, p. 209, June, 1906.

Gives a description of *Corixa florissantella* n. sp.

520. The fossil fauna and flora of the Florissant (Colorado) shales.—Colorado Univ., Studies, vol. 3, no. 3, pp. 157-175, 1 pl., 1906.

Gives an account of the character and occurrence of the fauna, discusses the evidence of the fossils as to the age of the deposits, and gives a classified, annotated summary of the fauna and flora. The plate contains figures of new species of plants described in the Bulletin of the Torrey Botanical Club, 1906.

521. Fossil Hymenoptera from Florissant, Colorado.—Harvard Coll., Mus. Comp. Zool., Bull., vol. 50, no. 2, pp. 33-58, 1906.

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524. Fossil saw-flies from Florissant, Colorado.—Am. Mus. Nat. Hist., Bull., vol. 22, pp. 499-501, 3 figs., 1906.

525. A new fly (fam. Mycetophilidæ) from the Green River beds.—Am. Jour. Sci., 4th ser., vol. 23, pp. 285-286, 1 fig., April, 1907.

526. Some old-world types of insects in the Miocene of Colorado.—Science, new ser., vol. 26, pp. 446-447, October 4, 1907.

527. An enumeration of the localities in the Florissant basin, from which fossils were obtained in 1906.—Am. Mus. Nat. Hist., Bull., vol. 23, pp. 127-132, 2 figs., 1907.

528. Fossil dragon flies from Florissant, Colorado.—Am. Mus. Nat. Hist., Bull., vol. 23, pp. 133-139, 3 figs., 1907.

529. Some fossil arthropods from Florissant, Colorado.—Am. Mus. Nat. Hist., Bull., vol. 23, pp. 605-616, 6 figs., 1907.

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Gives a list of Coleoptera and Arachnida identified from Florissant, Colorado, including those found fossil in the shales.

531. A fossil caterpillar [from the Miocene shales of Florissant, Colorado].—Canadian Entomologist, vol. 39, no. 6, pp. 187-188, June, 1907.

532. A fossil butterfly of the genus *Chlorippe*.—Canadian Entomologist, vol. 39, no. 11, pp. 361-363, 1 pl., November, 1907.

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533. A fossil Tortricid moth.—Canadian Entomologist, vol. 39, no. 12, p. 416, December, 1907.

Describes *Tortrix florissantana* n. sp. from the Miocene shales of Florissant, Colorado.

534. A fossil tsetse-fly in Colorado.—Nature, vol. 76, p. 414, August 22, 1907.

535. A Miocene wasp.—Nature, vol. 77, p. 80, November 28, 1907.

536. A new zonitoid shell from the Miocene, Florissant, Colorado.—Nautilus, vol. 21, no. 8, p. 89, December, 1907.

Describes *Vitrea fagalis* n. sp.

Coker, Ernest G.

An investigation into the elastic constants of rocks, more especially with reference to cubic compressibility.—See Adams and Coker, nos. 10, 11.

Experimental investigation of the compressibility and plastic deformation of certain rocks.—See Adams and Coker, no. 12.

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537. C. L. Herrick as a maker of scientific men.—Denison Univ., Sci. Lab., Bull., vol. 13, art. 1, pp. 1-13, 1 pl. (port.), 1905.

Coleman, Arthur P.

538. Durham County: geological features.—First Report of the Bureau of Archives for the Province of Ontario, 1903, pp. 46-47, 1 fig., 1904.

539. The Sudbury nickel field.—Ontario, Bur. Mines, Rept., 1905, vol. 14, pt. 3, 188 pp., illus., 1905.

Describes the general geology, the occurrence, character, and relations of the ore deposits, and the character and distribution of eruptive rocks, of Huronian sediments, and of Pleistocene deposits, and gives an account of the petrography of the nickel eruptive, of the economic developments of the field, and of the minerals found in the Sudbury nickel district of Ontario.

**Coleman, Arthur P.**—Continued.

**540.** Pre-Cambrian nomenclature.—*Jour. Geology*, vol. 14, no. 1, pp. 60-64, 1906.

Discusses, with regard to the report of the special committee of American and Canadian geologists on the nomenclature of the formations of the Lake Superior region, the relationships of various pre-Cambrian formations in the upper lakes region of Canada and their nomenclature.

**541.** The Helen iron mine, Michipicoten.—*Econ. Geology*, vol. 1, no. 6, pp. 521-529, 4 figs., 1906.

Describes the local geology, the rocks of the iron formation, the character of the ore body, and the origin of the ore.

**542.** Iron ranges of eastern Michipicoten.—*Ontario, Bur. Mines, Rept.*, 1906, vol. 15, pt. 1, pp. 173-199, 13 figs., 1 map, 1906.

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**543.** Magmatic segregation of sulphide ores.—*Abstract: British Assoc. Adv. Sci.*, Rept. 75th meeting, p. 400, 1906.

**544.** A lower Huronian ice age.—*Am. Jour. Sci.*, 4th ser., vol. 23, pp. 187-192, March, 1907. *Abstract: Science*, new ser., vol. 25, p. 769, May 17, 1907.

After referring briefly to evidence for ice ages prior to the glacial period, describes the Huronian "slate conglomerate" of Ontario, and striated boulders taken therefrom, and discusses the evidence for a lower Huronian ice age.

**545.** The need of field work in the study of ore genesis.—*Eng. and Min. Jour.*, vol. 83, pp. 295-296, February 9, 1907.

**546.** The Sudbury laccolithic sheet.—*Jour. Geology*, vol. 15, no. 8, pp. 759-782, 2 figs., 1907.

**547.** Interglacial periods in Canada.—*Gongr. géol. intern.*, (C.R. 10<sup>e</sup> sess., Mexico, 1906, pp. 1237-1258, 1907.

**548.** Iron ranges east of Lake Nipigon.—*Ontario, Bur. Mines, 16th Ann. Rept.*, vol. 16, pt. 1, pp. 105-135, 15 figs., 1907.

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**549.** Die Sudbury-Nickelerze.—*Zeitschr. f. prak. Geol.*, Jg. 15, p. 221, 1907.

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Report of a special committee on the correlation of the pre-Cambrian rocks of the Adirondack Mountains, the "original Laurentian area" of Canada, and eastern Ontario.—See Adams and others, no. 13.

**Collen, M.**

**550.** Copper deposits in the Belt formation in Montana.—*Econ. Geol.*, vol. 2, no. 6, pp. 572-575, 1907.

**Colles, George Wetmore.**

**551.** Mica and the mica industry.—*Franklin Inst., Jour.*, vol. 161, no. 1, pp. 43-58, 5 figs., January, 1906; no. 2, pp. 81-100, 6 figs., February, 1906. Reprinted in book form: *The Franklin Institute*, Philadelphia, 1906. 130 pp., 36 figs.

**Collier, Arthur J.**

**552.** Geology and coal resources of the Cape Lisburne region, Alaska.—*U. S. Geol. Survey, Bull.* no. 278, 54 pp., 9 pls., 8 figs., 1906.

Describes the geography, the stratigraphy, embracing Devonian, Carboniferous, and Mesozoic formations and Quaternary deposits, and in detail the coal resources of Jurassic and Carboniferous age.

**553.** Ore deposits in the St. Joe River basin, Idaho.—*U. S. Geol. Survey, Bull.* no. 285, pp. 129-139, 1 pl., 1 fig., 1906.

Describes the geography, drainage, and geology of the area, and the occurrence and character of the mineral resources.

Collier, Arthur J.—Continued.

554. Gold-bearing river sands of northeastern Washington.—U. S. Geol. Survey, Bull. no. 315, pp. 56-70, 1907.

Describes the general geology and geologic history of the region, the occurrence of gold-bearing placers, and their relation to the terraces.

555. The Arkansas coal field.—U. S. Geol. Survey, Bull. no. 316, pp. 137-160, 1 pl., 1907.

556. The Arkansas coal field. With reports on the paleontology by David White and G. H. Girty.—U. S. Geol. Survey, Bull. no. 326, 1907. 158 pp., 6 pls., 29 figs.

Describes the stratigraphy and structure, and the occurrence and character of the coals of western Arkansas.

The production in the United States in 1906 of chromite or chromic iron ore; and of talc and soapstone.—See no. 2419.

Collins, Edgar A.

557. The Combination Mine. Early developments and geologic structure.—Min. and Sci. Press, vol. 95, pp. 397-399, 435-438, 5 figs., 1907.

Describes the local geology and occurrence and character of ores in the Goldfield mining district, Esmeralda County, Nevada.

558. A prospecting shaft in the Goldfield district, Goldfield, Nevada.—Inst. Min. and Metall., Trans., vol. 15, pp. 540-542, 1906.

Describes the geology and occurrence of the ore bodies.

Collins, Henry F.

559. Notes on the wollastonite rock mass, and its associated minerals, of the Santa Fé mine, State of Chiapas, Mexico.—Min. Mag., vol. 13, pp. 356-362, December, 1903.

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560. [Report on] the Lake Superior region between the Pic and Nipigon rivers.—Canada, Geol. Survey, Summ. Rept. for 1905, pp. 80-82, 1906.

Gives notes upon the physical features and general geology of the area examined.

561. On surveys along the National Transcontinental Railway location between Lake Nipigon and Lac Seul.—Canada Geol. Survey, Summ. Rept. for 1906, pp. 103-109, 1906.

Includes a brief account of the region and its mineral deposits.

Colorado, State Bureau of Mines.

562. Report of the State Bureau of Mines for the years 1905-6. 127 pp., illus., 1907.

Contains notes on the occurrence of mineral resources. Includes a paper by Fleck and Haldane on uranium and vanadium deposits. See no. 878.

Comstock, Theodore B.

563. Geological notes.—Southern California Acad. Sci., Bull., vol. 1, pp. 74-77, 1902.

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564. The U. S. Geological Survey.—Science, new ser., vol. 25, pp. 309-311, February 22, 1907.

Condon, Thomas.

565. A new fossil pinniped (*Desmatophoca oregonensis*) from the Miocene of the Oregon coast.—Oregon Univ. Bull., Suppl. to vol. 3, no. 3, 14 pp., 2 pls., 3 figs., May, 1906.

**Condra, George Evart.**

566. Observations on glacial accumulations of Nebraska.—Abstract: Science, new ser., vol. 23, p. 620, April 20, 1906.

567. Oil and gas possibilities in Nebraska.—Abstract: Science, new ser., vol. 23, p. 621, April 20, 1906.

568. A new limestone in the Indian Territory.—Abstract: Science, new ser., vol. 23, p. 624, April 20, 1906.

569. Geography of Nebraska. Lincoln, Nebraska, The University Publishing Co., 1906. 192 pp., 118 figs.

Describes physiographic features.

570. Geology and water resources of the Republican River Valley and adjacent areas, Nebraska.—U. S. Geol. Survey, W.-S. and Irrig. Paper, no. 216, 71 pp., 13 pls., 3 figs., 1907.

571. Opening of the Indian Territory.—Am. Geog. Soc., Bull., vol. 39, no. 6, pp. 321-340, 9 figs., June, 1907.

Includes a general account of the physiography, geology, and mineral resources.

**Congrès géologique international.**

572. Procès-verbaux des séances générales.—Compte Rendu de la X<sup>e</sup> session, Mexico, 1906, pp. 108-156, 1907.

Contains discussions of papers relating to the geology of North America.

**Connecticut, State Geological and Natural History Survey.**

573. Second biennial report of the commissioners, 1905-1906. Hartford Press, 1906. 23 pp.

An administrative report.

**Cook, C. W.**

Datolite from Westfield, Massachusetts.—See Kraus and Cook, no. 1426.

**Cook, Edward H.**

574. La mina Santa Francisca.—México, Secretaría de Fomento, Bol., 2<sup>a</sup> época, ano 6, no. 6, II, pp. 562-569, 2 pls., 1907.

Gives notes upon the local geology and the occurrence and character of the silver ores at the Santa Francisca mine in the state of Aguascalientes, Mexico.

**Cooper, W. F.**

575. Geological report on Bay County [Michigan].—Michigan State Bd. of Geol. Survey, Ann. Rept., 1905, pp. 135-426, 17 pls., 1906.

Describes the occurrence and character of Carboniferous and Devonian strata, of Quaternary deposits, and of the coal seams, the physical geography and drainage, the economic products, and the water supply.

576. Geology and physical geography of Michigan.—Michigan Acad. Sci., Ninth Rept., pp. 136-144, 1907.

Discusses various physiographic features of Michigan: origin and tilting of the Great Lake basins, pre-Glacial drainage, terraces, etc.

**Corey, G. W.**

577. The Nonesuch sandstone.—Eng. and Min. Jour., vol. 82, p. 778, 1 fig., October 27, 1906.

Describes the character of the copper ore in the Nonesuch mine, Porcupine district, Michigan.

**Corkill, E. T.**

578. Mines of Ontario.—Ontario, Bur. Mines, Rept., 1906, vol. 15, pt. 1, pp. 47-107, 35 figs., 1906.

Includes notes on the occurrence and geology of ore bodies.

579. Mica in Ontario.—Canadian Min. Jour., vol. 28, no. 9 (new ser., vol. 1, no. 7), pp. 196-200, 6 figs., June 15, 1907.

**Cornforth, J. T.**

580. Alaska and its possibilities.—*Am. Min. Congr., Rept. of Proc., 9th Ann. Sess.*, pp. 260-263, 1907.

Includes notes on the mineral resources.

**Coste, Eugene.**

581. Natural gas and petroleum [in Ontario].—*Ontario, Bur. Mines, Rept.* 1906, vol. 15, pt. 1, pp. 108-115, 1906.

Includes records of borings.

582. The new Tilbury and Romney oil fields of Kent County, Ontario.—*Canadian Min. Jour.*, vol. 28, no. 11 (new ser., vol. 1, no. 9), pp. 265-268, July 15, 1907.

583. The Tilbury oil field, Ontario.—*Eng. and Min. Jour.*, vol. 84, p. 779, October 26, 1907.

**Courtis, William M.**

584. The Cobalt mining district.—*Eng. and Min. Jour.*, vol. 82, pp. 5-6, 5 figs., July 7, 1906.

Includes notes on the geology, and the occurrence and character of the ores of Cobalt, Ontario.

585. The Priest Lake mining district, Idaho.—*Eng. and Min. Jour.*, vol. 82, p. 866, November 10, 1906.

Contains notes on the general geology and the character of the ore deposits.

**Courtis, W. M.**

586. Gold in Michigan.—*Michigan State Board of Geol. Survey, Rept. for* 1906, pp. 581-584, 1907.

**Crafts, H. A.**

587. Some features of the great earthquake.—*Sci. Am.*, vol. 94, p. 383, May 12, 1906.

**Craig, E. H. Cunningham.**

588. Geological structure of Trinidad.—*Imperial Inst., Bull.*, vol. 5, no. 2, pp. 175-179, 1907.

**Crandall, Albert R.**

589. The coals of the Big Sandy Valley, south of Louisa and between Tug Fork and the headwaters of the north fork of Kentucky River.—*Kentucky Geol. Survey, Bull.* no. 4, 141 pp., 30 pls., 1905.

Describes the general geology and topography of the area, the occurrence, character, thickness, and relations of the coal seams, giving numerous sections, and the character and composition of the coals.

**Crandall, Roderic.**

590. The Cretaceous stratigraphy of the Santa Clara Valley region in California.—*Am. Jour. Sci.*, 4th ser., vol. 24, pp. 33-54, 3 figs., July, 1907.

Describes the occurrence of Cretaceous formations and gives lists of the fossils found in different exposures.

591. The geology of the San Francisco Peninsula.—*Am. Philos. Soc., Proc.*, vol. 46, no. 185, pp. 3-58, 1 pl. (map), 3 figs. and sections, 1907.

Describes the geologic formations and the petrography of their rocks, the geologic structure and physiographic features, and the earth movements in the San Francisco earthquake of April 18, 1906.

**Crane, W. R.**

592. Asphaltic coals in the Indian Territory: forms of the deposits, methods of prospecting and mining.—*Mines and Minerals*, vol. 26, no. 6, pp. 252-254, 6 figs., January, 1906.

Describes the distribution, relations, and character of the coal deposits.

Crane, W. R.—Continued.

593. Lead and zinc mining in the Quapaw district, Oklahoma.—*Mines and Minerals*, vol. 27, no. 9, pp. 445-446, 1 fig., May, 1907.

Describes the character and occurrence of the ores.

Crespi, R. A.

594. Geology and development of Aguacate mines, Costa Rica.—*Min. World*, vol. 27, pp. 847-848, November 9, 1907.

Crider, A. F.

595. Geology and mineral resources of Mississippi.—*U. S. Geol. Survey, Bull.* no. 283, 99 pp., 4 pls., 5 figs., 1906.

Describes the occurrence, character, and relations of Devonian, Mississippian, Cretaceous, Tertiary, and Quaternary formations, and the mineral resources, mainly clays and cement materials.

596. Clays of western Kentucky and Tennessee.—*U. S. Geol. Survey, Bull.* no. 285, pp. 417-427, 1 pl., 1906.

Describes the general geology and the distribution and character of the Cretaceous and Tertiary clays.

597. Drainage of wet lands in Arkansas by wells.—*U. S. Geol. Survey, W.-S. and Irrig. Paper* no. 160, pp. 54-58, 1 fig., 1906.

598. Cement and Portland cement materials of Mississippi.—*Mississippi State Geol. Survey, Bull.* no. 1, 73 pp., 6 pls., 1907.

Crider, A. F., and Johnson, L. C.

599. Summary of the underground-water resources of Mississippi.—*U. S. Geol. Survey, W.-S. and Irrig. Paper* no. 159, 86 pp., 6 pls., 11 figs., 1906.

Describes the topography, the general geology, the character and distribution of Devonian, Carboniferous, Cretaceous, Tertiary, and Quaternary formations, and the underground-water resources.

Crook, Alja Robinson.

600. The making of the Grand Canyon of the Colorado.—*Pop. Sci. Monthly*, vol. 69, pp. 417-424, 7 figs., November, 1906.

Crosby, William O.

The limestone-granite contact deposits of Washington Camp, Arizona.—*Am. Inst. Min. Eng., Trans.*, vol. 36, pp. 626-646, 1906 (*Bi-Mo. Bull.* no. 6, pp. 1217-1238, 1905).—See Crosby, 16, page 78 of *Bulletin* no. 301, *U. S. Geol. Survey*.

601. Ore deposits of the eastern gold belt of North Carolina.—*Tech. Quart.*, vol. 20, no. 3, pp. 280-286, September, 1907.

Describes the general geology, the genetic and structural relations of the gold-bearing formations, and mining developments.

602. Volcanic action in Alaska.—*Science, new ser.*, vol. 26, p. 78, July 19, 1907.

Cross, Whitman.

603. Prowersose (syenitic lamprophyre) from Two Buttes, Colorado.—*Jour. Geology*, vol. 14, no. 3, pp. 165-172, 1906.

Describes the occurrence, the macroscopic and microscopic characters, and the chemical composition, and compares it with similar rocks.

604. Stratigraphic results of a reconnaissance in western Colorado and eastern Utah.—*Jour. Geology*, vol. 15, no. 7, pp. 634-679, 11 figs., 1907.

Discusses the correlation of Cretaceous, Jurassic, Triassic, and Carboniferous formations.



Cross, Whitman—Continued.

605. Memoir of George H. Eldridge [1854-1905].—Geol. Soc. America, Bull., vol. 17, pp. 681-687, 1907.

Gives also a list of his publications.

606. Methods of igneous intrusion.—Abstract: Science, new ser., vol. 25, pp. 621-622, April 19, 1907.

Glacial phenomena of the San Juan Mountains, Colorado.—See Howe and Cross, no. 1247.

Cross, Whitman, Howe, Ernest, and Irving, J. D.

607. Description of the Ouray quadrangle [Colorado].—U. S. Geol. Survey, Geol. Atlas of U. S., folio no. 153, 20 pp., 4 figs., 2 maps, structure-section and illustration sheets, 1907.

Describes the topography, the character, occurrence, and relations of Algonkian, Devonian, Carboniferous, Triassic, Cretaceous, Tertiary, and Quaternary deposits, and of igneous surface and intrusive rocks, geologic structure and history, and the economic resources, chiefly gold, silver, and coal.

Cross, Whitman, Iddings, J. P., Pirsson, L. V., Washington, H. S.

608. The texture of igneous rocks.—Jour. Geology, vol. 14, no. 8, pp. 692-707, 7 figs., 1906.

Discusses the description of the texture of igneous rocks and sets forth a nomenclature for this purpose.

Cummings, Edgar R.

609.—The weathering of the Subcarboniferous limestones of southern Indiana.—Indiana Acad. Sci., Proc., 1905, pp. 85-89, 22 figs., 1906.

610. Description of the Bryozoa of the Salem limestone of southern Indiana.—Indiana, Dept. Geol. and Nat. Res., 30th Ann. Rept., pp. 1274-1296, illus., 1906.

611. Gasteropoda, Cephalopoda, and Trilobita of the Salem limestone.—Indiana, Dept. Geol. and Nat. Res., 30th Ann. Rept., pp. 1335-1375, illus., 1906.

Cummings, Edgar R., and Beede, Joshua W.

612. Fauna of the Salem limestone of Indiana: Introduction.—Indiana, Dept. Geol. and Nat. Res., 30th Ann. Rept., pp. 1189-1201, 6 pls., 1906.

Describes the localities from which collections were made, and gives general notes in regard to the fauna.

Curtis, George Carroll.

613. Looking into the Caribbean craters. A personal narrative of ascents to the active craters of La Soufrière and Pelée.—The Century Magazine, vol. 65, no. 3, pp. 420-434, 10 figs., January, 1903.

Cushing, H. P.

614. Geology of the Long Lake quadrangle.—New York State Mus., Bull. 115, pp. 451-531, 20 pls., 2 figs., geol. map, 1907.

Describes the occurrence, character, and relations of pre-Cambrian sedimentary and igneous intrusive rocks and the petrographic characters of the latter, the topography and the glaciation.

615. How faults should be named and classified.—Econ. Geology, vol. 2, no. 4, pp. 433-435, 1 fig., June, 1907.

616. Asymmetric differentiation in a batholith of Adirondack syenite.—Geol. Soc. America, Bull., vol. 18, pp. 477-492, 1 pl., December, 1907. Abstract: Science, new ser., vol. 25, p. 774, May 17, 1907.

617. Physical oscillations during the Cambro-Silurian in northeastern New York.—Abstract: Science, new ser., vol. 26, p. 403, September 27, 1907.

**Cushing, H. P.**—Continued.

Report of a special committee on the correlation of the pre-Cambrian rocks of the Adirondack Mountains, the "original Laurentian area" of Canada, and eastern Ontario.—See Adams and others, no. 13.

**Cushman, Joseph A.**

**618.** Types in the paleontological collections of the Boston Society of Natural History.—Boston Soc. Nat. Hist., Proc., vol. 33, no. 6, pp. 249-275, May, 1907.

**Daggett, Ellsworth.**

**619.** The extraordinary faulting at the Berlin Mine, Nevada.—Am. Inst. Min. Eng., Bi-Mo. Bull., no. 14, pp. 331-344, 5 figs., March, 1907; Eng. and Min. Jour., vol. 83, pp. 617-621, 6 figs., March 30, 1907.

**Dale, T. Nelson.**

**620.** The geological history of Mount Greylock [Massachusetts]. Pittsfield, Massachusetts, 1906. 17 pp., 5 figs.

**621.** Slate deposits and slate industry of the United States.—U. S. Geol. Survey, Bull. no. 275, 154 pp., 25 pls., 15 figs., 1906.

Describes the origin, composition, and structure of slate, the methods of quarrying, and the occurrence of slates in various States of the Union.

**622.** Note on a new variety of Maine slate.—U. S. Geol. Survey, Bull. no. 285, pp. 449-450, 1906.

Describes the occurrence and character.

**623.** The granites of Maine. With an introduction by George Otis Smith.—U. S. Geol. Survey, Bull. no. 313, 202 pp., 14 pls., 39 figs., 1907.

**624.** Recent work on New England granites.—U. S. Geol. Survey, Bull. no. 315, pp. 356-359, 1907.

**Dale, T. Nelson, and Eckel, Edwin C.**

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**643.** The hot springs at Thermopolis, Wyoming.—*Jour. Geology*, vol. 14, no. 3, pp. 194-200, 4 figs., 1906.

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**707.** Report of the geologist.—Pennsylvania Dept. Agric., 11th Ann. Rept., pp. 451-454, 1906.

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755. Copper in North Carolina.—Eng. and Min. Jour., vol. 83, p. 583, March 23, 1907.

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**761.** The Willamette meteorite.—Min. World, vol. 23, no. 10, p. 279, September 9, 1905.

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**762.** Cement materials of Mississippi.—U. S. Geol. Survey, Bull. no. 283, pp. 71-84, 1906.

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**763.** Contributions to economic geology, 1905: Investigation of iron ores and nonmetalliferous minerals.—U. S. Geol. Survey, Bull. no. 285, pp. 20-24, 1906.

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**765.** The Oriskany and Clinton iron ores of Virginia.—U. S. Geol. Survey, Bull. no. 285, pp. 183-189, 1 fig., 1906.

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**766.** Cement resources of the Cumberland Gap district, Tennessee-Virginia.—U. S. Geol. Survey, Bull. no. 285, pp. 374-376, 1906.

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**767.** Clays of Garland County, Arkansas.—U. S. Geol. Survey, Bull. no. 285, pp. 407-410, 1906.

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**768.** Investigations of iron ores, structural materials, etc.—U. S. Geol. Survey, Bull. no. 315, pp. 20-25, 1907.

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**769.** The mineral-paint ores of Lehigh Gap, Pennsylvania.—U. S. Geol. Survey, Bull. no. 315, pp. 435-437, 1907.

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Slate deposits of the United States.—See Dale and Eckel, no. 625.

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**Edman, J. A.**

**772.** The auriferous black sands of California.—California State Min. Bur., Bull. no. 45, pp. 5-10, 1907.

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**775.** The lead and zinc fields of southwestern Wisconsin.—Min. World, vol. 27, pp. 279-280, August 17, 1907.

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**777.** California's new coal fields.—Min. World, vol. 24, no. 7, p. 245, February 17, 1906.

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**779.** The Santa Clara Valley, Puente Hills, and Los Angeles oil districts, southern California.—U. S. Geol. Survey, Bull. no. 309, 266 pp., 41 pls., 17 figs., 1907.

**Ellis, E. E.**

**780.** Occurrence of water in crystalline rocks.—U. S. Geol. Survey, W.-S. and Irrig. Paper no. 160, pp. 19-28, 1 fig., 1906.

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**781.** [Report on] Graham Island (of the Queen Charlotte group, B. C.).—Canada, Geol. Survey, Summ. Rept. for 1905, pp. 53-55, 1906; British Columbia, Ann. Rept. Minister of Mines, for 1906, pp. 74-93, 1 map, 1907.

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**782.** Southern New Brunswick.—Canada, Geol. Survey, Summ. Rept. for 1906, pp. 131-139, 1906.

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**783.** Report on Graham Island, B. C.—Canada, Geol. Survey, Ann. Rept., vol. 16, pt. B, 45 pp., 2 maps, 1906.

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**787.** Notes on the geology and mineral resources of Trinidad and Barbados, B. W. Islands.—Ottawa Naturalist, vol. 23, no. 5, pp. 73-79, August, 1907.

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**789.** Quartz after prochlorite at Cranston and Worcester and coal plants at Worcester.—Science, new ser., vol. 26, p. 907, December 27, 1907.

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**793.** What is a fissure vein?—Econ. Geology, vol. 1, no. 4, pp. 385-387, 1906.

**794.** A map and cross-sections of the Downtown district of Leadville [Colorado].—Abstract: Science, new ser., vol. 23, pp. 816-817, May 25, 1906.

**795.** Useful definitions.—Min. and Sci. Press, vol. 93, pp. 355-356, September 22, 1906. Proper use of mining terms.—Min. World, vol. 25, no. 24, p. 715, December 15, 1906.

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**796.** Los Pilares mine, Nacozari, Mexico.—Econ. Geology, vol. 1, no. 7, pp. 629-643, 4 figs., 1906. Abstract: Eng. and Min. Jour., vol. 82, pp. 1066-1067, 2 figs., December 8, 1906.

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**798.** Uinta Mountains.—Geol. Soc. America, Bull., vol. 18, pp. 287-302, 1 pl., 2 figs., 1907.

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**Emmons, Samuel Franklin**—Continued.

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**804.** Ore deposits of Bear Creek, near Silverton, Colo.—U. S. Geol. Survey, Bull. no. 285, pp. 25-27, 1906.

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**805.** The Cashin mine, Montrose County, Colo.—U. S. Geol. Survey, Bull. no. 285, pp. 125-128, 1906.

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**806.** The Granite-Bimetallic and Cable mines, Pittsburg quadrangle, Montana.—U. S. Geol. Survey, Bull. no. 315, pp. 31-55, 4 figs., 1907.

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**807.** Normal faulting in the Bullfrog district.—Science, new ser., vol. 26, pp. 221-222, August 16, 1907.

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**836.** Glacial waters in the Lake Erie basin.—*New York State Mus., Bull.* 106, 86 pp., 23 pls., 4 figs., 1907.

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860. Stratigraphic work in the vicinity of East St. Louis.—Illinois State Geol. Survey, Bull. no. 4, pp. 213-217, 1907.

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**Fenneman, N. M., and Gale, Hoyt S.**

862. The Yampa coal field, Routt County, Colo.—U. S. Geol. Survey, Bull. no. 285, pp. 226-239, 1 pl. (map), 1906.

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**866.** A study of a portion of the Iowan drift border in Fayette County, Iowa.—Iowa Acad. Sci., Proc., vol. 13, pp. 215-218, 1906.

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**871.** Development of the Bear Creek coal fields, Montana.—U. S. Geol. Survey, Bull. no. 285, pp. 269-270, 1906.

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**872.** Mineral resources of the Bighorn basin.—U. S. Geol. Survey, Bull. no. 285, pp. 311-315, 1906.

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**874.** The Great Falls coal field, Montana.—U. S. Geol. Survey, Bull. no. 316, pp. 161-173, 1 pl., 1907.

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**875.** Terraces of the West River, Brattleboro, Vermont.—Boston Soc. Nat. Hist., Proc., vol. 33, no. 2, pp. 9-42, 11 pls., 11 figs., 1906.

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896. Coal mining in Michigan.—Eng. and Min. Jour., vol. 84, pp. 594-595, 2 figs., September 28, 1907.

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**Frech, Fritz**—Continued.

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**902.** [Physiography and geology of New Mexico.]—In "The Land of Sunshine," published by the New Mexico Bureau of Immigration, Santa Fe, N. M., pp. 23-39, 11 pls., 1906.

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**903.** Work of the eastern section of hydrology [of the United States Geological Survey] in 1905, and publications relating to underground waters.—U. S. Geol. Survey, W.-S. and Irrig. Paper no. 160, pp. 1-8, 1906.

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**912.** Clays of Cape Cod, Massachusetts.—U. S. Geol. Survey, Bull. no. 285, pp. 432-441, 1906.

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**913.** Glacial stages in southeastern New England and vicinity.—Science, new ser., vol. 24, pp. 467-469, October 12, 1906.

**914.** The elevated beaches of Labrador.—Abstract: Science, new ser., vol. 25, p. 32, January 4, 1907.

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934. The genesis of thermal waters and their connection with volcanism. Translation by F. L. Ransome of "La genèse des eaux thermales et ses rapports avec le volcanisme," (Ann. des Mines, 6<sup>e</sup> sér., t. 9, pp. 316-370, 1906).—Econ. Geology, vol. 1, no. 7, pp. 688-697, 1906.

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935. [Review of] Clays, their occurrence, properties, and uses, with special reference to those of the United States, by Heinrich Ries.—Econ. Geology, vol. 2, no. 6, pp. 603-606, 1907.

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938. [Sur les cendres rejetées par le volcan de la Montagne Pelée le 3 mai 1902.—*Boc. géol. de France, Bull., 4<sup>e</sup> sér., t. 2*, pp. 320-321, 1902.

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**Giroux, Joseph L.**

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**Girty, George H.**

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**970.** The university training of engineers in economic geology.—*Econ. Geology*, vol. 1, no. 5, pp. 476-479, 1906.

**971.** Underground waters of Tennessee and Kentucky west of Tennessee River and of an adjacent area in Illinois.—U. S. Geol. Survey, W.-S. and Irrig. Paper no. 164, 173 pp., 7 pls., 13 figs., 1906.

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**Goddard, Malcolm.**

**972.** Fish remains from the marine lower Triassic of Aspen Ridge, Idaho.—California Univ., Dept. Geol., Bull., vol. 5, no. 8, pp. 145-148, 5 figs., May, 1907.

**Goldsmith, E.**

**973.** The Jerseyite.—*Franklin Inst. Jour.*, vol. 164, no. 5, pp. 369-373, November, 1907.

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**Goldthwait, James Walter.**

**974.** Correlation of the raised beaches on the west side of Lake Michigan.—*Jour. Geology*, vol. 14, no. 5, pp. 411-424, 6 figs., 1906.

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**975.** The abandoned shore-lines of eastern Wisconsin.—*Wisconsin Geol. and Nat. Hist. Survey, Bull.* no. 17, 134 pp., 37 pls., 37 figs., 1907.

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**Gordon, Clarence E.**

**976.** Studies on early stages in Paleozoic corals.—*Am. Jour. Sci.*, 4th ser., vol. 21, pp. 109-127, 18 figs., February, 1906.

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**Gordon, Charles H.**

**979.** New Mexico geology.—*Science*, new ser., vol. 25, p. 109, January 18, 1907.

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**980.** Some features of the geology of Magdalena and Black Range region.—Abstract: *Science*, new ser., vol. 25, pp. 824-825, May 24, 1907.

**981.** Mississippian (Lower Carboniferous) formations in the Rio Grande Valley, New Mexico.—*Am. Jour. Sci.*, 4th ser., vol. 24, pp. 58-64, 1 fig., July, 1907.

**982.** Notes on the Pennsylvanian formations in the Rio Grande Valley, New Mexico.—*Jour. Geology*, vol. 15, no. 8, pp. 805-816, 2 figs., 1907.

**Gordon, Charles H., and Graton, Louis Caryl.**

**983.** Lower Paleozoic formations in New Mexico.—*Am. Jour. Sci.*, 4th ser., vol. 21, pp. 390-395, May, 1906; *Science*, new ser., vol. 23, pp. 590-591, April 13, 1906.

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**Gordon, W. C.**

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**Gould, Charles N.**

**986.** The geology and water resources of the eastern portion of the Panhandle of Texas.—U. S. Geol. Survey, W.-S. and Irrig. Paper no. 154, 64 pp., 15 pls., 4 figs., 1906.

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**987.** The geology and water resources of the western portion of the Panhandle of Texas.—U. S. Geol. Survey, W.-S. and Irrig. Paper no. 191, 70 pp., 7 pls., 3 figs., 1907.

**988.** The oil fields of Oklahoma.—Eng. and Min. Jour., vol. 84, p. 259, August 10, 1907.

**Gow, Paul A., and others.**

**989.** Report on the property of the Daly-Judge mining company, Park City, Utah.—Colorado School of Mines, Bull., vol. 4, no. 1, pp. 31-70, 15 figs., 1907.

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**990.** The Daly-Judge mine and mill, Park City, Utah.—Mines and Minerals, vol. 28, pp. 32-35, 79-82, 11 figs., 1907.

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**Grabau, Amadeus W.**

**991.** Guide to the geology and paleontology of the Schoharie Valley in eastern New York.—N. Y. State Mus., Bull. 92 (58th Ann. Rept., vol. 3), pp. 77-386, 24 pls., 216 figs., 1906.

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**992.** Relative ages of the Oneida and Shawangunk conglomerates.—Abstract: Geol. Soc. America, Bull., vol. 16, p. 582, 1906.

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Defines the various kinds of overlap in sedimentation and in the application of the principles laid down discusses the deposits of the basal Paleozoic series, of the basal Mesozoic series, the Saint Peter and Dakota sandstones, and upper Devonian and lower Carboniferous formations of the Appalachian region.

**994.** Discovery of the Schoharie fauna in Michigan.—Abstract: Science, new ser., vol. 23, p. 467, March 23, 1906; Geol. Soc. America, Bull., vol. 17, pp. 718-719, 1907.

**995.** Notes on the character and origin of the Pottsville formation of the Appalachian region.—Abstract: Science, new ser., vol. 24, p. 691, November 30, 1906.

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The study is based in part upon fossil material.

**997.** Subaerial erosion cliffs and talus in the lower Devonian of Michigan.—*Abstract: Science*, new ser., vol. 25, pp. 295-296, February 22, 1907.

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**999.** Geology and scenery of the Upper Genesee falls.—*Science*, new ser., vol. 25, pp. 538-539, April 5, 1907.

**1000.** Age and stratigraphic relations of the Chattanooga black shale.—*Abstract: Science*, new ser., vol. 25, p. 771, May 17, 1907.

**1001.** The Medina sandstone problem.—*Abstract: Science*, new ser., vol. 25, pp. 771-772, May 17, 1907.

**1002.** The Sylvania sandstone—a study in paleogeography.—*Abstract: Science*, new ser., vol. 26, p. 832, December 13, 1907.

**1003.** Seventh international zoological congress—section of paleozoology.—*Science*, new ser., vol. 26, pp. 881-883, December 20, 1907.

Gives an account of the proceedings of the meeting held in Boston, August 19-24, 1907, and the titles of the papers presented.

**1004.** Evolution of some Devonian spirifers.—*Abstract: New York Acad. Sci., Annals*, vol. 17, pt. 3, pp. 574-575, 1907.

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**1005.** North American index-fossils.—*School of Mines Quart.*, vol. 27, no. 2, pp. 138-243, 175 figs., January, 1906; vol. 38, no. 1, pp. 20-100, 46 figs., November, 1906.

Gives brief descriptions of "index" fossils: species, genera, and higher groups, with keys to the genera. Includes references to the literature.

**1006.** North American index fossils. II.—*School of Mines Quart.*, vol. 28, no. 2, pp. 150-221, 89 figs., no. 3, pp. 251-352, 165 figs., 1907.

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**Graham, Blakely.**

**1007.** The Cooney district, New Mexico.—*Eng. and Min. Jour.*, vol. 82, pp. 731-732, October 20, 1906.

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**1008.** Note on two interesting pseudomorphs in the McGill University mineral collection.—*Am. Jour. Sci.*, 4th ser., vol. 22, pp. 47-54, 3 figs., July, 1906.

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1012. The Schuyler mine, Kingsland, New Jersey.—Franklin Inst., Jour., vol. 164, pp. 13-28, 217-223, 7 figs., 1907.

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1013. Notes on the past collecting season.—Hamilton Sci. Assoc., Jour. and Proc., no. 22, pp. 107-114, 2 figs., 1906.

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1016. Notes during the collecting season.—Hamilton Sci. Assoc., Jour. and Proc., no. 23, pp. 138-144, 1907.

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**Grant, Ulysses Sherman.**

1017. Report on the lead and zinc deposits of Wisconsin, with an atlas of detailed maps.—Wisconsin Geol. and Nat. Hist. Survey, Bull. no. 14, 100 pp., 26 pls. (18 in atlas), 10 figs., 1906.

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1018. Zinc and lead deposits in Wisconsin.—Min. Mag., vol. 13, no. 6, pp. 453-460, 7 figs., June, 1906.

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1019. Structural relations of the Wisconsin zinc and lead deposits.—Econ. Geology, vol. 1, no. 3, pp. 233-242, 4 figs., December-January, 1905-1906.

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1020. Copper and other mineral resources of Prince William Sound.—U. S. Geol. Survey, Bull. no. 284, pp. 78-87, 1 fig., 1906.

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1022. The Clove Valley Pleistocene lake basin.—Staten Island Nat. Sci. Assoc., Proc., vol. 8, no. 2, pp. 3-4, 1901.

**Gratacap, L. P.**—Continued.

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**1024.** The largest American collection of meteorites.—*Pop. Sci. Monthly*, vol. 69, no. 1, pp. 21-28, 6 figs., July, 1906.

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**1025.** Reconnaissance of some gold and tin deposits of the southern Appalachians.—*U. S. Geol. Survey, Bull.* no. 293, pp. 9-118, 7 pls., 14 figs., 1906.

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**1026.** Description and petrology of the metamorphic and igneous rocks.—*U. S. Geol. Survey, Prof. Paper* no. 54, pp. 41-113, 4 pls., 1906.

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Lower Paleozoic formations in New Mexico.—See Gordon and Graton, no. 983.

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**Greaves-Walker, A. F.**

**1027.** The flint fire clay deposit of northeastern Kentucky.—*Am. Ceramic Soc., Trans.*, vol. 9, pp. 461-472, 1 fig., 1907.

**Greenawalt, William E.**

**1028.** The tungsten deposit of Boulder County, Colo.—*Eng. and Min. Jour.*, vol. 83, pp. 951-952, 1 fig., May 18, 1907.

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**1030.** [On the age of the rocks near Kentland, Newton County, Ind.]—*Contributions to Indiana Paleontology*, New Albany, Indiana, vol. 2, pt. 1, pp. 11-17, 3 figs., 1906.

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**1033.** The geology of Connecticut in relation to its water supply.—*Connecticut Bd. Agric.*, 39th Ann. Rept., pp. 283-297, 1906.

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**Gregory, J. W.**

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1040. The orders of teleostomous fishes. A preliminary review of the broader features of their evolution and taxonomy.—New York Acad. Sci., Annals, vol. 17, pt. 2, pp. 437-508, 2 pls., September, 1907.

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**Griffith, William.**

1041. Kinds and occurrence of anthracite coal.—Min. Mag., vol. 13, no. 3, pp. 214-221, March, 1906.

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**Griggs, Robert E.**

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**Grimsley, G. P.**

1044. Clays, limestones, and cements.—West Virginia Geol. Survey, vol. 3, 565 pp., 44 pls., 50 figs. [1906].

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1045. Portland cement resources of West Virginia.—Eng. and Min. Jour., vol. 83, pp. 998-999, May 25, 1907.

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**Griswold, W. T.**

1047. The coals of the Steubenville quadrangle in West Virginia.—West Virginia Geol. Survey, County Reports and Maps: Ohio, Brooke, and Hancock counties, pp. 224-237, 1 pl. [1907].

The production in the United States in 1905 of natural gas and of petroleum.—See no. 2418.

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1048. Geology of the oil and gas fields in Steubenville, Burgettstown, and Claysville quadrangles, Ohio, West Virginia, and Pennsylvania.—U. S. Geol. Survey, Bull. no. 318, 196 pp., 13 pls., 1907.

**Grout, Frank F.**

1049. The composition of coals.—Econ. Geology, vol. 2, no. 3, pp. 225-241, 4 figs., April-May, 1907.

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**Guerra, Manuel Fernández.**

1051. Solución á las cuestiones técnico-geológicas, propuestas por el Sr. Lic. D. Luis Méndez, presidente de la Academia de jurisprudencia y legislación, sobre si son denunciabiles los mantos de carbón de piedra y los depósitos de petróleo que existan en terrenos de propiedad particular.—Soc. Geol. Mexicana, Bol., t. 2, pp. 87-110, 1906.

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**Guild, F. N.**

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1054. Coon Mountain crater.—Science, new ser., vol. 26, pp. 24-25, July 5, 1907.

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**Gulliver, F. P.**

1055. Brewsters Neck, Connecticut.—Abstract: Science, new ser., vol. 24, pp. 368-369, September 21, 1906.

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**Gunther, C. G.**

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**Gwillim, J. C.**

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**Haddon, R. W.**

1061. Zinc mining in New Mexico.—Eng. and Min. Jour., vol. 81, pp. 845-846, 2 figs., May 5, 1906.

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1062. Report of committee [of the San Francisco Association of members of the American Society of Civil Engineers] on the geology of the [San Francisco] earthquake.—*Am. Soc. Civil Eng., Proc.*, vol. 33, no. 3, pp. 307-313, 7 figs., March, 1907; *Trans.*, vol. 59, pp. 216-222, 2 pls., 2 figs., December, 1907.

**Halberstadt, Baird.**

1063. Halberstadt's general map of the bituminous coal fields of Pennsylvania, 1907.

**Haldane, Wm. G.**

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**Hall, C. W.**

1064. Some geological features of the Minnesota Seaside Station [Vancouver Island].—*Postelsia*, the Yearbook of the Minnesota Seaside Station, St. Paul, Minnesota, 1906, pp. 305-347, 8 pls.

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1065. Report of survey of crest line of Niagara Falls.—*U. S. Geol. Survey, Bull.* no. 306, pp. 26-31, 1907.

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**Harris, Gilbert D.**

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**Harvard University.**

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**Haven, G. T.**

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**Haworth, Erasmus.**

1098. History, geography, geology, and metallurgy of Galena-Joplin lead and zinc.—*Kansas, Univ. Geol. Survey*, vol. 8, pp. 1-126, 23 pls., 7 figs., 1904.

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**Hay, Oliver P.**

1099. Descriptions of two new genera (*Echmatemys* and *Xenochelys*) and two new species (*Xenochelys formosa* and *Terrapene putnami*) of fossil turtles.—*Am. Mus. Nat. Hist., Bull.*, vol. 22, pp. 27-31, 7 figs., 1906.

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**Hayes, C. Willard.**

1108. The relation of the federal government to the mining industry.—Am. Min. Cong., 8th. Ann. Sess., pp. 46-59, 1906.

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1109. Contributions to economic geology, 1905: Introduction.—U. S. Geol. Survey, Bull. no. 285, pp. 1-13, 1906.

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1110. Introduction to Contributions to economic geology, 1906, part I.—U. S. Geol. Survey, Bull. no. 315, pp. 7-13, 1907.

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**Rutledge, J. J.**

**2108.** Davis pyrites mine, Massachusetts: a unique deposit and some unusual methods of mining.—Eng. and Min. Jour., vol. 82, pp. 673-676, 724-728, 772-775, illus., 1906.

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**2109.** Der Kleinit, ein hexagonales Quecksilberoxychlorid von Terlingua in Texas.—K. preussischen Akad. d. Wiss., Sitzb., no. 52, pp. 1091-1094, 1905.

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**2110.** Notiz zu der chemischen Zusammensetzung des Kleinits.—Centralbl. f. Mineral., pp. 200-202, 1906.

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2114. Glacial geology of the Bald Mountain and Dayton quadrangles, Wyoming.—*U. S. Geol. Survey, Geol. Atlas of U. S.*, folio no. 141 pp. 9-12, 1906.

2115. Glacial geology of the Cloud Peak and Fort McKinney quadrangles, Wyoming.—*U. S. Geol. Survey, Geol. Atlas of U. S.*, folio no. 142, pp. 9-12, 1906.

2116. Glacial geology of the Bighorn Mountains.—*U. S. Geol. Survey, Prof. Paper no. 51*, pp. 71-90, 11 pls., 9 figs., 1906.

2117. *Physiography*. New York, Henry Holt and Company, 1907. 770 pp., 26 pls., 707 figs.

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2118. Amber in Santo Domingo.—*Eng. and Min. Jour.*, vol. 80, pp. 250-251, August 12, 1905.

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2122. Galena series.—*Geol. Soc. Am., Bull.*, vol. 18, pp. 179-194, 2 figs., 1907. Abstract: *Science*, new ser., vol. 25, p. 771, May 17, 1907.

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**Sarle, Clifton J.**

2123. *Arthropycus* and *Dadalus* of burrow origin.—*Rochester Acad. Sci., Proc.*, vol. 4, pp. 203-210, 4 figs., 1906.

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2124. Preliminary note on the nature of *Taonurus*.—*Rochester Acad. Sci., Proc.*, vol. 4, pp. 211-214, 1906.

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2125. A preliminary report on the peat resources of Iowa.—*Iowa Geol. Survey, Bull. no. 2*, pp. 5-21, 1905.

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**2128.** Geology of Jackson County [Iowa].—Iowa Geol. Survey, vol. 16, pp. 563-648, 15 figs., 2 geol. maps, 1906.

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**2129.** Water resources of the Springfield quadrangle [Illinois].—Illinois State Geol. Survey, Bull. no. 4, pp. 235-244, 1907.

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**2141.** The Gold Prince mine and mill [at Animas Forks, Colorado].—Mines and Minerals, vol. 27, no. 8, pp. 337-345, 14 figs., March, 1907.

Includes notes on the occurrence of the gold ores.

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**2143.** Copper deposits of the Zuñi Mountains, New Mexico.—Abstract: Science, new ser., vol. 23, p. 916, June 15, 1906.

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**2144.** Economic geology of the Independence quadrangle, Kansas.—U. S. Geol. Survey, Bull. no. 296, 74 pp., 6 pls., 3 figs., 1906.

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**2150.** Gold development in central Uinta County, Wyo., and at other points on Snake River.—U. S. Geol. Survey, Bull. no. 315, pp. 71-88, 2 pls., 1907.

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**2153.** Memoir of John B. Hatcher.—Geol. Soc. America, Bull., vol. 16, pp. 548-555, 1 pl. (port.), 1906.

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**Seaman, A. E.**

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**Seamon, W. H.**

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**2157.** The San Francisco earthquake of April 18.—Nature, vol. 74, p. 30, May 10, 1906.

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**2164.** Beekmantown and Chazy formations in the Champlain Valley. Contributions to their geology and paleontology.—Vermont Geol. Survey, Fifth Rept. State Geol., pp. 174-187, 7 pls., 1906.

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**2166.** Systematic paleontology of the Pleistocene deposits of Maryland: Insecta.—Maryland Geol. Survey, Pliocene and Pleistocene, pp. 170-172, pl. 40, fig. 3, 1906.

**2167.** Geological history of cockroaches.—Pop. Sci. Monthly, vol. 68, no. 3, pp. 244-250, 8 figs., March, 1906



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2175. Gypsum in northwestern New Mexico.—U. S. Geol. Survey, Bull. no. 315, pp. 260-265, 1 fig., 1907.

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2178. Do the geological relations of ore deposits justify the retention of the law of the apex?—Econ. Geology, vol. 2, no. 1, pp. 62-77, 4 figs., 1907.

2179. Mining, mineral, and geological law. New York, Hill Publishing Company, 1907. 627 pp., 101 figs.

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2180. The drainage area of the east fork of White River [Indiana].—Indiana Acad. Sci., Proc., 1906, pp. 53-70, 1 pl., 20 figs., 1907.

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2181. The iron-ore deposits of Indiana.—Indiana, Dept. Geol. and Nat. Res., 31st Ann. Rept., pp. 299-428, 18 pls., 7 figs., 1907.

Iron ores of Martin County, Indiana.—See Beede and Shannon, no. 182.

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2182. Some associations of gold with pyrite and tellurides.—Min. and Sci. Press, vol. 94, pp. 117-119, 11 figs., January 26, 1907.

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2184. The Pliocene and Pleistocene deposits of Maryland.—Maryland Geol. Survey, Pliocene and Pleistocene, pp. 21-137, 31 pls., 9 figs., 1906.

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**Shattuck**, George Burbank—Continued.

**2185.** Description of the St. Marys quadrangle [Maryland-Virginia].—U. S. Geol. Survey, Geol. Atlas of U. S., folio no. 136, 7 pp., 1 fig., 2 maps, 1906.

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**2186.** Development of knowledge concerning the principal features of Calvert County, with bibliography.—Maryland Geol. Survey, Calvert County, pp. 25-53, 1 pl., 1907.

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**2192.** Some geological rambles, near Vassar College, Poughkeepsie [New York.] Poughkeepsie, The Vassar College Press, 1907. 108 pp., illus.

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**2193.** Description of the Patuxent quadrangle [Maryland-District of Columbia].—U. S. Geol. Survey, Geol. Atlas of U. S., folio no. 152, 12 pp., 2 figs., 3 maps, and columnar-section sheet, 1907.

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**Shepard**, Edward M.

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**Sheridan**, Jo E.

**2195.** Report of the mine inspector for the Territory of New Mexico to the Secretary of the Interior for the year ended June 30, 1906. Washington, Government Printing Office, 1906. 87 pp.

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**2196.** Report of the mine inspector for the Territory of New Mexico to the Secretary of the Interior for the fiscal year ended June 30, 1907. Washington, Government Printing Office, 1907. 48 pp.

**Sherzer, William H.**

**2197.** Glacial notes from the Canadian Rockies and Selkirks.—*Science*, new ser., vol. 23, pp. 351-354, March 2, 1906.

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**2197a.** Glaciers of the Canadian Rockies and Selkirks.—*Smithsonian Contr. to Knowledge*, vol. 34, xii, 135 pp., 42 pls., 1907.

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**2202.** Old age in Brachiopoda, a preliminary study.—*Am. Naturalist*, vol. 40, pp. 95-121, 30 figs., February, 1906. *Abstract: Science*, new ser., vol. 23, p. 290, February 23, 1906; *Am. Assoc. Adv. Sci., Proc.*, vol. 55, p. 379, 1906.

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**2203.** An almost complete specimen of *Strenuella strenua* (Billings).—*Am. Jour. Sci.*, 4th ser., vol. 23, pp. 199-201, 3 figs., March, 1907.

Describes a specimen of the trilobite *Strenuella strenua* from the lower Cambrian slates of Massachusetts.

**2204.** A lower-middle Cambrian transition fauna from Braintree, Mass.—*Am. Jour. Sci.*, 4th ser., vol. 24, pp. 176-178, 1 fig., August, 1907.

**2205.** The broader features of the geologic history of North America in diagram.—*Tech. Quart.*, vol. 20, no. 3, pp. 287-291, 1 fig., September, 1907.

North American index fossils.—See Grabau and Shimer, nos. 1005, 1006.

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**2206.** Alluvial slopes.—*Science*, new ser., vol. 23, pp. 748-749, May 11, 1906.

**2207.** Gypsum of the Uncompahgre region, Colorado.—*U. S. Geol. Survey, Bull.* no. 285, pp. 401-403, 1 fig., 1906.

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**2208.** Gypsum deposits of the Laramie district, Wyoming.—*U. S. Geol. Survey, Bull.* no. 285, pp. 404-405, 1906.

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**2209.** Bentonite of the Laramie basin, Wyoming.—*U. S. Geol. Survey, Bull.* no. 285, pp. 445-447, 1906.

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**2210.** Notes on glaciation in the Sangre de Cristo Range, Colorado.—*Jour. Geology*, vol. 15, no. 1, pp. 15-22, 6 figs., 1907.

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**2211.** Coal of Laramie basin, Wyoming.—*U. S. Geol. Survey, Bull.* no. 316, pp. 261-263, 1907.

Description of the Joplin district.—See Smith and Siebenthal, no. 2251.

**Silver, L. P.**

**2212.** The Animikie iron range.—Ontario, Bur. Mines, Rept., 1906, vol. 15, pt. 1, pp. 156-172, 6 figs., 1 map, 1906.

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**Sinclair, William J.**

**2213.** Some Edentate-like remains from the Mascall beds of Oregon.—California Univ., Dept. Geol., Bull., vol. 5, no. 2, pp. 65-66, 3 figs., 1906.

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**Slichter, Charles S.**

**2215.** The underflow in Arkansas Valley in western Kansas.—U. S. Geol. Survey, W.-S. and Irrig. Paper no. 153, 90 pp., 3 pls., 24 figs., 1906.

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**2216.** The underflow of the South Platte Valley.—U. S. Geol. Survey, W.-S. and Irrig. Paper no. 184, 42 pp., 13 figs., 1906.

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**2217.** A preliminary report on the clays of South Carolina.—South Carolina Geol. Survey, ser. 4, Bull. no. 1, 175 pp., 8 pls., 1904.

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**2219.** A list of Devonian fossils collected in western New York, with notes on their stratigraphic distribution.—Field Columbian Mus., Geol. Ser., vol. 2, no. 8, pp. 257-265, 2 pls., 1906.

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**Smith, Carl D.**

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**Smith, Essie Alma.**

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**Smith, Eugene A.**

**2223.** Memoir of Henry McCalley.—Geol. Soc. America, Bull., vol. 16, pp. 555-558, 1906.

Includes a list of his writings.

**2224.** The overlap of the St. Stephens limestone on the lower Tertiary formations in Crenshaw and Pike counties, Ala.—Abstract: Science, new ser., vol. 23, pp. 287-288, February 23, 1906.

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**Smith, Eugene A.**—Continued.

**2226.** On some post-Eocene and other formations of the Gulf region of the United States.—*Science*, new ser., vol. 23, pp. 481-491, March 30, 1906.

Describes the progress of geologic investigation of the Gulf coastal region since 1881, and particularly the stratigraphic position, relations, and genesis of the Grand Gulf formation.

**2227.** Sketch of the mineral resources of Alabama.—In "The Alabama Opportunity," published by the [Alabama] Department of Agriculture and Industries, pp. 169-184 [1906].

**2228.** On some post-Eocene and other formations of the Gulf region of the United States.—*Am. Assoc. Adv. Science, Proc.*, vol. 55, pp. 357-374, 1906.

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**2229.** The underground water resources of Alabama.—*Alabama Geol. Survey* [Bull. no. 9 (?)], 388 pp., 30 pls., 23 figs., 1907.

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**Smith, George Otis.**

**2230.** Two occurrences of graphite [in Maine].—Abstract: *Science*, new ser., vol. 23, pp. 915-916, June 15, 1906.

**2231.** Graphite in Maine.—*U. S. Geol. Survey, Bull.* no. 285, pp. 480-483, 1906.

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**2232.** Review of "Economic Geology of the United States," by H. Ries.—*Econ. Geol.*, vol. 1, no. 7, pp. 719-725, 1906.

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**2234.** Note on a mineral deposit in Maine.—*U. S. Geol. Survey, Bull.* no. 315, pp. 118-119, 1907.

**2235.** Twenty-eighth annual report of the Director of the United States Geological Survey to the Secretary of the Interior for the fiscal year ended June 30, 1907. Washington, 1907. 80 pp., 1 pl.

An administrative report outlining the operations of the U. S. Geological Survey during the fiscal year ended June 30, 1907.

**2236.** Methods of igneous intrusion.—Abstract: *Science*, new ser., vol. 25, p. 623, April 19, 1907.

**2237.** Relations of Geological Survey to mining industry.—*Min. World*, vol. 27, pp. 924-926, November 23, 1907.

**2238.** The possibilities and limitations of Geological Survey work as applied to mining industry.—*Min. and Sci. Press*, vol. 95, pp. 652-654, November 23, 1907.

**2239.** The work of the U. S. Geological Survey.—*Eng. and Min. Jour.*, vol. 84, pp. 1019-1020, November 30, 1907.

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The production in the United States in 1906 of graphite.—See no. 2419.

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**Smith, George Otis, Bastin, Edson S., and Brown, Charles W.**

**2241.** Description of the Penobscot Bay quadrangle [Maine].—U. S. Geol. Survey, Geol. Atlas of U. S., folio no. 149, 14 pp., 2 maps and structure-section sheet, 1907.

Describes the topography, the occurrence, character, and relations of Cambrian and Silurian rocks, the geologic structure and history, and the economic resources.

**Smith, James Perrin.**

**2242.** The paragenesis of the minerals in the glaucophane-bearing rocks of California.—Am. Philos. Soc., Proc., vol. 45, pp. 183-242, 1906.

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**2243.** The stratigraphy of the western American Trias.—Festschrift, Adolf v. Koenen, E. Schweizerbartsche Verlagsbuchhandlung, Stuttgart, pp. 377-434, 1 pl., 1907.

Discusses principles of stratigraphic correlation and the correlation of Triassic strata based upon paleontologic data, and gives a summary of the later stratigraphy of western North America.

**Smith, Leonard S.**

**2244.** Water powers of northern Wisconsin.—U. S. Geol. Survey, W.-S. and Irrig. Paper no. 156, 145 pp., 5 pls., 5 figs., 1906.

Includes a brief general account of the geology of Wisconsin.

**Smith, Philip S.**

**2245.** Gold fields of the Solomon and Niukluk River basins [Alaska].—U. S. Geol. Survey, Bull. no. 314, pp. 146-156, 1907.

**2246.** Geology and mineral resources of Iron Creek [Alaska].—U. S. Geol. Survey, Bull. no. 314, pp. 157-163, 1 fig., 1907.

**2247.** The gray iron ores of Talladega County, Ala.—U. S. Geol. Survey, Bull. no. 315, pp. 161-184, 1907.

**Smith, T. Elliott.**

**2248.** El Oro, the premier gold camp of Mexico.—Min. World, vol. 24, no. 13, pp. 412-413, March 31, 1906.

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**Smith, W. S. Tangier.**

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**2250.** The administration of the U. S. Geological Survey.—Science, new ser., vol. 26, pp. 286-287, August 30, 1907.

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**2251.** Description of the Joplin district [Missouri-Kansas].—U. S. Geol. Survey, Geol. Atlas of U. S., folio no. 148, 20 pp., 13 figs., 3 maps, mine maps and illustration sheets, 1907.

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**Smith, Warren D.**

**2252.** Discussion of paper by Marius R. Campbell: Hypothesis to account for the transformation of vegetable matter into different grades of coal.—Econ. Geology, vol. 1, no. 6, pp. 581-583, 1906.

**Smith, William S.**

**2253.** Mineral resources of Uintah Reservation [Utah].—Min. World, vol. 23, no. 18, pp. 491-492, 1 fig., November 4, 1905.

**Smyth, Henry Lloyd.**

2254. The relations between gold and pyrite.—*Min. and Sci. Press*, vol. 93, pp. 58-59, 4 figs., July 14, 1906.

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2255. Magnetic observations in geological and economic work. I.—*Econ. Geology*, vol. 2, no. 4, pp. 367-379, 5 figs., June, 1907.

**Snedaker, J. A.**

2256. Copper mines in Colorado.—*Eng. and Min. Jour.*, vol. 83, pp. 817-818, April 27, 1907.

**Solórzano, M. M., and Hobson, Bernard.**

2257. Plant remains in basalt, Mexico.—*Geol. Mag.*, dec. 5, vol. 4, no. 5, pp. 217-219, 1 pl., May, 1907.

**Sovereign, L. Douglas.**

2258. Valuable crystals and rare minerals of San Diego County, California.—*Min. World*, vol. 23, no. 19, pp. 521-522, November 11, 1905.

**Spandel, Erich.**

2259. Die Foraminiferen des Permo-Carbon von Hooser, Kansas, Nord Amerika.—*Saecular-Feler der Naturhistorischen Gesellschaft in Nürnberg*, 1801-1901, Festschrift, pp. 175-194, 10 figs., [1901].

**Spencer, Arthur Coe.**

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The origin of vein-filled openings in southeastern Alaska.—*Am. Inst. Min. Eng., Trans.*, vol. 36, pp. 581-586, 3 figs., 1906 (*Bi-Mo. Bull.* no. 6, pp. 1211-1216, 3 figs., 1905).—See Spencer, 18, page 315 of Bulletin no. 301, U. S. Geol. Survey.

2260. What is a fissure vein?—*Econ. Geology*, vol. 1, no. 3, p. 286, December-January, 1905-1906.

2261. The Juneau gold belt, Alaska.—*U. S. Geol. Survey, Bull.* no. 287, pp. 1-137, 34 pls. (incl. maps), 37 figs., 1906.

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2262. Magnetite deposits of the Cornwall type in Berks and Lebanon counties, Pa.—*U. S. Geol. Survey, Bull.* no. 315, pp. 185-189, 1907.

Discusses more particularly the occurrence and origin of the iron ores.

**Spencer, Joseph William Winthrop.**

2263. [Report on] Niagara Falls and Niagara district.—*Canada Geol. Survey, Summ. Rept.* for 1905, pp. 87-91, 1906.

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2264. The Jamaica earthquake.—*Abstract: Science*, new ser., vol. 25, pp. 966-967, June 21, 1907.

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2266. The Falls of Niagara, their evolution and varying relations to the Great Lakes; characteristics of the power and the effect of its diversion.—*Canada, Geol. Survey*, 1907. 400 pp., 43 pls., 30 figs., 1 map.

**Springer, Frank.**

**2267.** Discovery of the disk of *Onychocrinus*, and further remarks on the Crinoidea Flexibilia.—*Jour. Geology*, vol. 14, no. 6, pp. 467-523, 4 pls., 1906.

Describes the ventral structure of *Onychocrinus* and discusses the relation of various members of the Flexibilia and the evolution of certain structural features. Gives a synoptic arrangement of the genera.

**Springer, Frank, and Slocum, Arthur Ware.**

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**Spurr, Josiah Edward.**

Genetic relations of the western Nevada ores.—*Am. Inst. Min. Eng., Trans.*, vol. 36, pp. 372-402, 1906 (*Bi-Mo. Bull.* no. 5, pp. 939-969, 1905).—See Spurr, 31, page 319 of Bulletin no. 301, U. S. Geol. Survey.

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**2270.** The southern Klondike district, Esmeralda County, Nev. A study in metalliferous quartz veins of magmatic origin.—*Econ. Geology*, vol. 1, no. 4, pp. 369-382, 1 fig., 1906.

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**2271.** Ore deposits of the Silver Peak quadrangle, Nevada.—*U. S. Geol. Survey, Prof. Paper* no. 55, 174 pp., 24 pls., 40 figs., 1906.

Describes the character, occurrence, and relations of Cambro-Ordovician, Tertiary, and Quaternary sediments, of pre-Tertiary igneous rocks, of Tertiary and Quaternary lavas, and of the gold and silver ores and other economic minerals, and the mining operations, and discusses the genetic relations of ore deposits and the theory of metalliferous veins of magmatic quartz.

**2272.** How should faults be named and classified?—*Econ. Geology*, vol. 2, no. 2, pp. 182-184, no. 6, pp. 601-602, 1907.

**2273.** A theory of ore deposition.—*Econ. Geology*, vol. 2, no. 8, pp. 781-795, 1907.

**2274.** The Goldfields district, Nevada.—*Abstract: Franklin Inst., Jour.*, vol. 164, no. 2, pp. 155-160, August, 1907.

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**Spurr, Josiah Edward, and Garrey, George H.**

**2275.** The Idaho Springs mining district, Colorado.—*U. S. Geol. Survey, Bull.* no. 285, pp. 35-40, 1906.

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**Stafford, O. F.**

**2276.** The mineral resources and mineral industry of Oregon for 1903.—*Oregon Univ., Bull.*, new ser., vol. 1, no. 4, 112, viii pp., 5 pls., 1904.

**Stanley, F. C.**

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**Stauffer, Clinton R.**

**2277.** The Hamilton in Ohio.—*Jour. Geology*, vol. 15, no. 6, pp. 590-596, 1907.

Describes the occurrence, character, and relations of various Devonian formations of the State of Ohio, more particularly those considered to be of Hamilton age.

**2278.** The Devonian limestones of central Ohio and southern Indiana.—*Ohio Naturalist*, vol. 7, no. 8, pp. 184-186, June, 1907.

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**Stead, Geoffrey.**

- 2279.** Notes on a grindstone quarry at Stonehaven, Gloucester Co., N. B.—New Brunswick Nat. Hist. Soc., Bull., no. XXIV (vol. 5, pt. 4), pp. 407-408, 1906.  
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**Stearns, Robert E. C.**

- 2280.** Fossil Mollusca from the John Day and Mascall beds of Oregon.—California Univ., Dept. Geol., Bull., vol. 5, no. 3, pp. 67-70, 4 figs, 1906.

**Stephenson, L. W.**

- 2281.** Some facts relating to the Mesozoic deposits of the coastal plain of North Carolina.—Johns Hopkins Univ. Circ., new ser., 1907, no. 7, pp. 93-99 [681-687], 1907.

**Sterki, V.**

- 2282.** Fossil land and fresh water Mollusca collected in Defiance County, Ohio.—Ohio Naturalist, vol. 7, no. 5, pp. 110-111, March, 1907.  
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**Sternberg, Charles H.**

- 2283.** The Loup Fork Miocene of western Kansas.—Kansas Acad. Sci., Trans., vol. 20, pt. 1, pp. 71-74, 1906.  
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- 2284.** *Porthus molossus*, Cope, and other fishes from the Kansas chalk.—Abstract: Science new ser., vol. 25, p. 295, February 22, 1907.

- 2285.** The great inferior tusked mastodon of the Loup Fork Miocene.—Science, new ser., vol. 25, pp. 971-972, June 21, 1907.

- 2286.** Some animals discovered in the fossil beds of Kansas.—Kansas Acad. Sci., Trans., vol. 20, pt. 2, pp. 122-124, 1907.

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**Sterrett, Douglas B.**

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- 2288.** Mica deposits of western North Carolina.—U. S. Geol. Survey, Bull. no. 315, pp. 400-422, 5 figs., 1907.

- 2289.** Monazite in North Carolina, South Carolina, and Georgia.—U. S. Geol. Survey, Mineral Resources for 1906, pp. 1196-1204, 1907.

Describes the geologic occurrence and relations of monazite deposits.

The production in the United States in 1906 of mica; of monazite and zircon; and of precious stones.—See no. 2419.

**Stevens, Horace J.**

- 2290.** The copper handbook. A manual of the copper industry of the world. Compiled and published by Horace J. Stevens, Houghton, Mich., 1906.

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- 2291.** Mines of the Lake Superior copper district.—Lake Superior Min. Inst., Proc., vol. 12, pp. 8-24, 8 figs., 1907.

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**Stevenson, John J.**

- 2293.** A bit of Quaternary geology [Vermont].—Abstract: Science, new ser., vol. 23, p. 388, March 9, 1906.

**Stevenson, John J.**—Continued.

**2294.** Carboniferous of the Appalachian basin.—*Geol. Soc. America, Bull.*, vol. 17, pp. 65-228, 1906.

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**2295.** Carboniferous of the Appalachian basin.—*Geol. Soc. America, Bull.*, vol. 18, pp. 29-178, 1907.

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**Stewart, John L.**

**2297.** Ore deposits and industrial supremacy.—*Econ. Geology*, vol. 1, no. 3, pp. 257-264, December-January, 1905-1906.

**Stieglitz, J.**

**2298.** On the relations of equilibrium between the carbon dioxide of the atmosphere and calcium sulphate and calcium carbonate and bicarbonate in solutions in water in contact with it.—Abstract: *Carnegie Inst. of Washington, Yearb.* no. 5, pp. 171-172, 1907.

**Stines, Norman S.**

**2299.** The geology of the Coffee Creek mining district [California].—*Min. and Sci. Press*, vol. 95, pp. 25-26, July 6, 1907.

**Stokes, H. N.**

**2300.** Experiments on the solution, transportation, and deposition of copper, silver, and gold.—*Econ. Geology*, vol. 1, no. 7, pp. 644-650, 1906.

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**2301.** Experiments on the action of various solutions on pyrite and marcasite.—*Econ. Geology*, vol. 2, no. 1, pp. 14-23, 1907.

**Stokes, Ralph.**

**2302.** Mining in the Boundary copper field.—*Min. World*, vol. 27, pp. 179-182, 5 figs., August 3, 1907.

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**2303.** The Cobalt silver field as an industry.—*Min. World*, vol. 27, pp. 306-309, 346-349, 427-429, 17 figs., 1907.

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**2304.** The Sudbury nickel-copper field, Ontario.—*Min. World*, vol. 27, pp. 507-510, 553-555, 8 figs., 1907.

**2305.** The asbestos industry of Quebec.—*Min. World*, vol. 27, pp. 637-639, 799-801, 9 figs., 1907.

**2306.** The St. Eugene silver-lead mine, British Columbia.—*Min. World*, vol. 27, pp. 967-968, 1 fig., November 30, 1907.

**2307.** Mining in the Rossland district, British Columbia.—*Min. World*, vol. 27, pp. 1083-1084, 1123-1125, 4 figs., 1907.

**Stone, Ralph W.**

**2308.** Coal fields of the Kachemak Bay region [Alaska].—*U. S. Geol. Survey, Bull.* no. 277, pp. 55-73, 5 pls., 1 fig., 1906.

Gives a history of the coal mining in the region, and describes the general geology and in detail the occurrence and character of the coal deposits and the composition and fuel value of the coals.

Stone, Ralph W.—Continued.

2309. Reconnaissance from Circle to Fort Hamlin [Alaska].—U. S. Geol. Survey, Bull. no. 284, pp. 128-131, 1906.

Gives an account of the geography and geology of the region traversed.

2310. The Elkhorn coal field, Kentucky.—U. S. Geol. Survey, Bull. no. 316, pp. 42-54, 1 pl., 1907.

2311. The Russell Fork coal field, Virginia.—U. S. Geol. Survey, Bull. no. 316, pp. 55-67, 1 pl., 1907.

2312. Coal mining in Dante, Va.—U. S. Geol. Survey, Bull. no. 316, pp. 68-75, 1 fig., 1907.

Describes the stratigraphy, and the occurrence, character, composition, and mining of the coals.

2313. The Pine Mountain fault.—Abstract: Science, new ser., vol. 25, p. 620, April 19, 1907.

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2314. Oil and gas fields of Greene County, Pa.—U. S. Geol. Survey, Bull. no. 304, 110 pp., 3 pls., 7 figs., 1907.

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2315. Earthquake lines.—Min. and Sci. Press, vol. 92, p. 289, 2 figs., May 5, 1906.

Describes the geologic structure to which the California earthquake of April 18, 1906, was due.

2316. Gold veins in granite in California.—Min. and Sci. Press, vol. 92, p. 348, May 26, 1906.

2317. The Black Hills of South Dakota.—Min. World, vol. 24, pp. 242, 272-273, 303-304, 1906.

Gives a description of the geology of the Black Hills region and of its ore deposits.

Stose, George W.

2318. The sedimentary rocks of South Mountain, Pennsylvania.—Jour. Geol.ogy, vol. 14, no. 3, pp. 201-220, 3 figs., 1906.

Describes the topography, stratigraphy, and geologic structure of the region. Gives a table of the geologic formations, showing their thickness, character, and relations.

2319. The glass-sand industry in eastern West Virginia.—U. S. Geol. Survey, Bull. no. 285, pp. 473-475, 1906.

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2320. White clays of South Mountain, Pennsylvania.—U. S. Geol. Survey, Bull. no. 315, pp. 322-334, 1 fig., 1907.

2321. Phosphorus ore at Mount Holly Springs, Pa.—U. S. Geol. Survey, Bull. no. 315, pp. 474-483, 1907.

The production in the United States in 1906 of phosphorus.—See no. 2419.

Stotesbury, Harold W.

The Yak mining, milling, and tunnelling company, Leadville, Colorado.—See Armington and Stotesbury, no. 55.

Stout, W. H.

2322. Report of the geologist.—Pennsylvania, Dept. Agric., 11th Ann. Rept., pp. 455-457, 1906.

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2323. Geology as related to agriculture.—Pennsylvania, Dept. Agric., 12th Ann. Rept., pp. 470-471, 1907.

Sullivan, E. C.

2324. The secondary enrichment of copper-iron sulphides.—*Am. Inst. Min. Eng., Bi-Mo. Bull.* no. 13, pp. 143-145, January, 1907.

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Surface, G. T.

2326. Physiography of Virginia.—*Am. Geog. Soc., Bull.*, vol. 38, no. 12, pp. 741-753, December, 1906.

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Swartz, Charles K.

2328. The Ithaca fauna of Maryland.—*Johns Hopkins Univ. Circ.*, new ser., 1907, no. 7, pp. 50-55 [638-643], 1907.

2329. The relation of the Columbus and Sandusky formations of Ohio.—*Johns Hopkins Univ. Circ.*, new ser., 1907, no. 7, pp. 56-65 [644-653], 1907.

Taber, C. A. M.

2330. The cause of geologic periods. Boston, Geo. H. Ellis Co., 1907. 68 pp.

Taber, Stephen.

2331. Some local effects of the San Francisco earthquake.—*Jour. Geology*, vol. 14, no. 4, pp. 303-315, 9 figs., 1906. See also *Jordan*, no. 1325.

Describes the faulting which produced the earthquake and its movements, as shown by various local displacements.

Taff, Joseph A.

2332. Description of the Muscogee quadrangle [Indian Territory].—*U. S. Geol. Survey, Geol. Atlas of U. S.*, folio no. 132, 7 pp., 1 fig., 3 maps, 1 columnar section sheet, 1906.

Describes the physiographic features, the occurrence, character, and relations of pre-Cambrian, pre-Carboniferous, and Carboniferous formations, the geologic structure and history, and the economic resources.

2333. Natural coke in the Wasatch Plateau.—*Abstract: Science*, new ser., vol. 23, p. 696, May 4, 1906.

2334. Notes on the Weber River coal field, Utah.—*U. S. Geol. Survey, Bull.* no. 285, pp. 285-288, 1906.

Describes the stratigraphy and structure of the field, and the occurrence, character, and composition of the coals.

2335. Book Cliffs coal field, Utah, west of Green River.—*U. S. Geol. Survey, Bull.* no. 285, pp. 289-302, 1 pl. (map), 1906.

Describes the stratigraphy and structure of the field, and the occurrence, character, and composition of the coals.

2336. The Durango coal district, Colorado.—*U. S. Geol. Survey, Bull.* no. 316, pp. 321-337, 1 pl., 1907.

2337. The Pleasant Valley coal district, Carbon and Emery counties, Utah.—*U. S. Geol. Survey, Bull.* no. 316, pp. 338-358, 1 pl., 1907.

The production in the United States in 1906 of asphalt and bituminous rock.—See no. 2419.

Taff, Joseph A., and Smith, Carl D.

2338. Ozokerite deposits in Utah.—*U. S. Geol. Survey, Bull.* no. 285, pp. 369-372, 1906.

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**Taft, H. H.**

**2339.** Goldfield and Tonopah.—Eng. and Min. Jour., vol. 81, pp. 557-558, March 24, 1906.

Includes notes on the general geology and the occurrence of the gold ores.

**2340.** Notes on Inyo County, California.—Eng. and Min. Jour., vol. 81, pp. 704-705, April 14, 1906.

Contains notes on the geology and physiography of the area and on the occurrence of borax deposits.

**2341.** Mining in southern Nevada. A region that includes the mining districts of Goldfield, Bullfrog, Tonopah, Death Valley, etc.—Mines and Minerals, vol. 26, no. 11, pp. 515-518, 2 figs., June, 1906.

Includes notes on the geology of the region.

**2342.** Notes on southern Nevada and Inyo County, California.—Am. Inst. Min. Eng., Trans., vol. 37, pp. 178-197, 1907.

**Talmage, J. E.**

**2343.** Seismographs in Utah.—Science, new ser., vol. 26, pp. 556-558. October 25, 1907.

Includes notes on the geology in the vicinity of Salt Lake City.

**Tarr, R. P.**

**2344.** The Washington coal situation.—Eng. and Min. Jour., vol. 83, p. 1010, May 25, 1907.

**2345.** The Montana coal situation.—Eng. and Min. Jour., vol. 84, pp. 550-551, September 21, 1907.

Includes notes on the occurrence, character, and composition of coals.

**Tarr, Ralph S.**

**2346.** The Yakutat Bay region [Alaska].—U. S. Geol. Survey, Bull. no. 234, pp. 61-64, 1906.

Describes the geography, stratigraphy, and the economic resources—petroleum, coal, and gold.

**2347.** Glacial erosion in the Finger Lake region of central New York.—Jour. Geology, vol. 14, no. 1, pp. 18-21, 1906.

Presents further evidence that the Finger Lake valleys are due to glacial erosion.

**2348.** Watkins Glen and other gorges of the Finger Lake region of central New York.—Pop. Sci. Monthly, vol. 68, no. 5, pp. 387-397, 8 figs., May, 1906.

Describes the topography of the region and explains the formation of the gorges.

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**2364.** Distribution of drumlins and its bearing upon their origin.—Abstract: Geol. Soc. America, Bull., vol. 17, p. 726, 1907.

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**2383.** Determination of minerals by petrographical methods.—Mineral Collector, vol. 13, no. 6, pp. 89-90, August, 1906.

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**2390.** Pyrite from Cornwall, Lebanon County, Pennsylvania.—Am. Philos. Soc., Proc., vol. 45, pp. 131-148, 10 figs., 1906.

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**2407.** The origin of the small sand mounds in the Gulf coast country.—*Science*, new ser., vol. 23, pp. 849-851, June 1, 1906.

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**2408.** Report on a geological survey of the lands belonging to the New York and Texas Land Company (Ltd.), in the upper Rio Grande embayment in Texas.—Augustana Library Publications, Rock Island, Ill., no. 6, pp. 51-107, 7 pls., 1 map, 1907.

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Describes the physiography of the region, the occurrence, character, relations, and economic value of Ordovician, Carboniferous, Cretaceous, and Tertiary strata, and of igneous rocks, the geologic structure and history, and the mineral resources, particularly quicksilver and coal.

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Gives notes upon the strata (coal measures) passed through in the drilling.

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Upham, Warren.

2415. Quaternary history of the upper Mississippi Valley.—Abstract: Geol. Soc. America, Bull., vol. 17, pp. 725-726, 1907.

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2416. Soil survey field book. Field season, 1906. 319 pp.

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Field operations of the Bureau of Soils.—See Whitney, nos. 2570, 2571.

U. S. Geological Survey.

2417. The San Francisco earthquake and fire of April 18, 1906, and their effects on structures and structural materials.—U. S. Geol. Survey, Bull. no. 324, 170 pp., 57 pls., 2 figs., 1907.

Contains the following papers:

Preface, by Joseph A. Holmes, pp. xi-xii.

The earthquake as a natural phenomenon, by G. K. Gilbert, pp. 1-13.

The effects of the earthquake and fire on various structures and structural materials, by Richard L. Humphrey, pp. 14-61.

The effects of the earthquake and fire on buildings, engineering structures, and structural materials, by John S. Sewell, pp. 62-130.

The earthquake and fire and their effects on structural steel and steel-frame buildings, by Frank Soule, pp. 131-158.

List of papers relating to the earthquake and fire, pp. 159-161.

2418. Mineral resources of the United States, calendar year 1905, 1403 pp., 1906.

Contains the following papers, largely statistical in character, relating to the production, condition of the industry, etc., but also in some cases containing notes on the geology and occurrence of the products treated:

Mineral products of the United States in 1904 and 1905, pp. 23-41.

Value, by States, of mineral products in 1905, by Wm. Taylor Thom, pp. 42-52.

(Metals.)

Antimony, by C. C. Schnatterbeck, pp. 435-439.

Bismuth, by C. C. Schnatterbeck, pp. 441-443.

Copper, by Charles Kirchhoff, pp. 343-362.

Gold and silver, by Waldemar Lindgren and others, pp. 113-341.

Production in the United States, by Waldemar Lindgren, pp. 113-127.

Alaska, by Alfred H. Brooks, pp. 127-134.

Arizona, by V. C. Helkes, pp. 134-162.

California, by Charles G. Yale, pp. 162-185.

Colorado, by Waldemar Lindgren, pp. 185-214.

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Montana, by Alexander N. Winchell, pp. 242-259.

Nevada, by Charles G. Yale, pp. 259-275.

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- New Mexico, by Waldemar Lindgren, pp. 275-284.
- Oregon, by Charles G. Yale, pp. 284-293.
- South Dakota, by Waldemar Lindgren, pp. 293-297.
- Southern Appalachian States, including Alabama, Georgia, Maryland, North Carolina, South Carolina, and Tennessee, by Waldemar Lindgren, pp. 297-304.
- Texas, by Waldemar Lindgren, pp. 304-305.
- Utah, by V. C. Helkes, pp. 305-331.
- Washington, by Charles G. Yale, pp. 331-337.
- Wyoming, by Waldemar Lindgren, pp. 337-341.
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- Lead, by Charles Kirchhoff, pp. 363-370.
- Manganese ores, by John Birkinbine, pp. 87-111.
- Platinum, by F. W. Horton, pp. 423-434.
- Quicksilver, by F. W. Horton, pp. 393-404.
- Silver. See Gold and silver.
- Steel-hardening metals, by Joseph Hyde Pratt, pp. 405-421.
- Tin, by Frank L. Hess, pp. 445-451.
- Zinc, by Charles Kirchhoff, pp. 371-377.
- Zinc and lead ores, by H. Foster Bain, pp. 379-392.

## (Fuels.)

- Coal, by Edward W. Parker, pp. 453-714.
- Coke, by Edward W. Parker, pp. 715-766.
- Gas, coke, tar, and ammonia at gas works and in retort coke ovens, by Edward W. Parker, pp. 767-797.
- Natural gas, by W. T. Griswold, pp. 799-812.
- Petroleum, by W. T. Griswold, pp. 813-920.

## (Structural materials.)

### Cement:

- Advance in cement technology, by Edwin C. Eckel, pp. 921-923.
- Statistics of cement industry, by L. L. Kimball, pp. 924-944.
- Clay-working industries, by Jefferson Middleton, pp. 945-1002.
- Lime and sand-lime brick, by Edwin C. Eckel, pp. 1003-1006.
- Sand and gravel, by A. T. Coons, pp. 1007-1010.
- Slate, pp. 1011-1020.
- Stone industry, by A. T. Coons, pp. 1021-1067.

## (Abrasive materials.)

- Abrasive materials, by Joseph Hyde Pratt, pp. 1069-1085.

## (Chemical materials.)

- Arsenious oxide, by C. C. Schnatterbeck, pp. 1087-1089.
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- Gypsum and gypsum products, by Edwin C. Eckel, pp. 1105-1115.
- Phosphate rock, by Edmund Otis Hovey, pp. 1117-1126.
- Salt, by Edmund Otis Hovey, pp. 1127-1135.
- Sulphur and pyrite, pp. 1137-1143.
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- Mineral paints, pp. 1147-1154.

## (Miscellaneous.)

- Asbestos, by George Otis Smith, pp. 1155-1159.
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- Lithium minerals, by Edmund Otis Hovey, pp. 1271-1272.
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- Monazite and zircon, by Joseph Hyde Pratt, pp. 1313-1317.  
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 Quartz (flint) and feldspar, by Heinrich Ries, pp. 1359-1360.  
 Talc and soapstone, by Joseph Hyde Pratt, pp. 1361-1368.

**2419.** Mineral resources of the United States. Calendar year, 1906. 1307 pp., 2 figs., 1907.

Contains the following papers, largely statistical in character, relating to the production, condition of the industry, etc., but also in some cases containing notes on the geology and occurrence of the products treated:

- Introduction, by David T. Day and E. W. Parker, pp. 9-12.  
 Summary of mineral production of the United States in 1906, compiled by Wm. Taylor Thom, pp. 13-65.

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- Antimony, by Frank L. Hess, pp. 511-516.  
 Bauxite and aluminum, by Ernest F. Burchard, pp. 501-510.  
 Bismuth, by Frank L. Hess, p. 517.  
 Chromite or chromic iron ore, by Arthur J. Collier, pp. 541-542.  
 Copper, by L. C. Graton, pp. 373-438.  
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   Idaho, by V. C. Heikes, pp. 240-267.  
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**(Structural materials.)****Cement:**

- Advances in cement technology, 1906, by Edwin C. Eckel, pp. 897-905.  
 Statistics of cement industry in 1906, by L. L. Kimball, pp. 906-931.  
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 Lime and sand-lime brick, by Edwin C. Eckel, pp. 985-991.  
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Magnesite, by Charles G. Yale, pp. 1145-1147.

Mica, by Douglas B. Sterrett, pp. 1149-1163.

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The papers in this bulletin have been listed under the individual authors.

Contributions to economic geology, 1906. Part I. Metals and nonmetals, except fuels.—U. S. Geol. Survey, Bull. no. 315, 505 pp., 4 pls., 20 figs., 1907.

The papers in this bulletin have been listed under the individual authors.

Contributions to economic geology, 1906. Part II. Coal, lignite, and peat.—U. S. Geol. Survey, Bull. no. 316, 543 pp., 23 pls., 6 figs., 1907.

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Report on progress of investigations of mineral resources of Alaska in 1906.—See Brooks, A. H., and others.

Vallat, B. W.

2420. The iron ores and system of mining at Sunrise mine, Wyoming.—Colorado Sci. Soc., Proc., vol. 8, pp. 315-322, 6 pls., 1907.

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2518. Geologic structure of the State [of Illinois].—Illinois State Geol. Survey, Bull. no. 2, pp. 21-22, 1 pl., 1906.

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2519. Kinderhook faunal studies. IV. The fauna of the Glen Park limestone.—St. Louis Acad. Sci., Trans., vol. 16, no. 7, pp. 435-471, 2 pls., 1906.

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**Wheeler, Arthur O.**

2529. Nakimu caves [British Columbia].—Canada, Dept. of the Interior, Rept. Surveyor-General for 1906, pp. 103-117, 1 pl., 1907.

**Wheeler, H. A.**

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**Wheeler, W. M.**

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**Wherry, Edgar T.**

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2538. Die Mutationstheorie und die Paläontologie.—Natur und Schule, Leipzig, Jahrg. 3, pp. 248-253, 1904 [not seen].

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**White, David.**

2541. A source of hydrocarbons in the Ordovician.—Abstract: Science, new ser., vol. 23, pp. 814-816, May 25, 1906.

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Gives a list of the plants identified and considers them to indicate a lower Mississippian age.

**2544.** A remarkable fossil tree trunk from the middle Devonian of New York.—New York State Mus., Bull. 107, pp. 327-360, 11 pls., 1907.

**2545.** Report on the field work in the coal districts of the State.—Illinois State Geol. Survey, Bull. no. 4, pp. 201-203, 1907.

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**2546.** Report on fossil plants from the coal measures of Arkansas.—U. S. Geol. Survey, Bull. no. 326, pp. 24-31, 1907.

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**2547.** A composite Lycopod type from the Devonian.—Abstract: Science, new ser., vol. 25, p. 269, February 15, 1907.

**2548.** Some problems concerning the formation of coal.—Abstract: Science, new ser., vol. 25, pp. 965-966, June 21, 1907.

**White, David, and Ashley, George H.**

**2549.** Correlation of coals.—U. S. Geol. Survey, Prof. Paper no. 49, pp. 206-212, 1906.

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**White, I. C.**

**2550.** Introduction [to the Report on the geology of the Pan Handle counties of West Virginia].—West Virginia Geol. Survey, County Reports and Maps: Ohio, Brooke, and Hancock counties, pp. vii-xxi, 1 fig. [1907].

Includes a discussion of the occurrence of certain coal beds.

**White, W. P.**

On wollastonite and pseudo-wollastonite, polymorphic forms of calcium metasilicate.—See Allen and White, no. 27.

Die Kalkkieselreihe der Minerale.—See Day and others, no. 690.

**Whiteaves, J. F.**

**2551.** [Report on] paleontology and zoology.—Canada, Geol. Survey, Summ. Rept. for 1905, pp. 131-134, 1906.

Gives a short account of the work done in paleontology and zoology during the year by the Geological Survey of Canada.

**2552.** [Report on] paleontology and zoology.—Canada, Geol. Survey, Summ. Rept. for 1906, pp. 170-174, 1906.

Gives an outline of the work of the year in this section of the Geological Survey of Canada.

**2553.** The fossils of the Silurian (Upper Silurian) rocks of Keewatin, Manitoba, the northeastern shore of Lake Winnipegosis, and the lower Saskatchewan River.—Canada Geol. Survey, Paleozoic Fossils, vol. 3, pt. 4, pp. 243-298, 14 pls., 1906.

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**Whiteaves, J. F.**—Continued.

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2558. Notes on *Cyrtoceras cuneatum*.—Ottawa Nat., vol. 20, no. 7, pp. 133-134, 2 figs., October, 1906.

2559. Illustrations of the fossil fishes of the Devonian rocks of Canada. Part III. Supplementary notes.—Canada, Roy. Soc., Proc. and Trans., 3d ser., vol. 1, sect. 4, pp. 245-275, 4 pls., 1907.

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2563. Remarks on and descriptions of [invertebrate] Jurassic fossils of the Black Hills.—Am. Mus. Nat. Hist., Bull., vol. 22, pp. 389-402, 21 pls., 1906.

**Whitlock, Herbert P.**

2564. Books of reference on geology and paleontology.—Congress of Arts and Science, Universal Exposition, St. Louis, 1904, vol. 4, pp. 757-759, 1906.

2565. Minerals from Lyon Mountain, Clinton County [New York].—New York State Mus., Bull. 107, pp. 55-96, 11 pls., 1907.

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2567. Some new crystallographic combinations of calcite from West Patterson, N. J.—Am. Jour. Sci., 4th ser., vol. 24, pp. 426-428, 3 figs., November, 1907.

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**Whitney, Milton, and others.**

2570. Field operations of the Bureau of Soils, 1904.—U. S. Dept. Agric., Bureau of Soils, Sixth Report, Washington, 1905. 1151 pp., 1 pl., 45 figs., 53 maps (in separate case).

Contains soil surveys of the following areas:

Alabama, Macon County, by Henry J. Wilder and Hugh H. Bennett, pp. 291-316.

Alabama, Sumter County, by William G. Smith, pp. 317-342.

Arizona-California, Yuma area, by J. Garnett Holmes and others, pp. 1025-1048.

California, Bakersfield area, by Macy H. Lapham and Charles A. Jensen, pp. 1089-1114.



**Whitney, Milton, and others—Continued.**

- California, Sacramento area, by Macy H. Lapham, pp. 1049-1088.  
 California, San Bernardino area, by J. Garnett Holmes and others, pp. 1115-1151.  
 Colorado, Greely area, by J. Garnett Holmes and N. R. Neill, pp. 951-994.  
 Florida, Gainesville area, by Thomas D. Rice and W. J. Gelb, pp. 269-290.  
 Georgia, Bainbridge area, by Elmer O. Fippin and J. A. Drake, pp. 247-268.  
 Georgia, Dodge County, by Charles W. Ely and A. M. Griffen, pp. 231-246.  
 Indiana, Boonville area, by A. W. Mangum and N. R. Neill, pp. 727-750.  
 Indiana, Marshall County, by Frank Bennett and Charles W. Ely, pp. 689-706.  
 Indiana, Scott County, by A. W. Mangum and N. R. Neill, pp. 707-728.  
 Iowa, Tama County, by Charles W. Ely and others, pp. 769-790.  
 Kansas, Allen County, by J. A. Drake and W. E. Tharp, pp. 875-894.  
 Kansas, Garden City area, by James L. Burgess and George N. Coffey, pp. 895-934.  
 Kentucky, Warren County, by Thomas D. Rice and W. J. Gelb, pp. 527-542.  
 Louisiana, De Soto Parish, by Grove B. Jones and La Mott Ruhlen, pp. 375-396.  
 Michigan, Alma area, by W. Edward Hearn and A. M. Griffen, pp. 639-664.  
 Michigan, Munising area, by Thomas D. Rice and W. J. Gelb, pp. 565-580.  
 Michigan, Owosso area, by A. W. Mangum and Charles J. Mann, pp. 665-688.  
 Michigan, Saginaw area, by W. E. McLendon and M. Earl Carr, pp. 603-638.  
 Mississippi, Biloxi area, by W. Edward Hearn and M. E. Carr, pp. 353-374.  
 Mississippi, Jackson area, by J. O. Martin and O. L. Ayrs, pp. 343-352.  
 Missouri-Illinois, O'Fallon area, by Elmer C. Fippin and J. A. Drake, pp. 815-844.  
 Missouri, Saline County, by M. Earl Carr and H. L. Belden, pp. 791-814.  
 Missouri, Webster County, by J. A. Drake and A. T. Strahorn, pp. 845-858.  
 Nebraska, Kearney area, by J. O. Martin and A. T. Sweet, pp. 859-874.  
 New York, Auburn area, by J. E. Lapham and Hugh H. Bennett, pp. 95-118.  
 North Dakota, Cando area, by Elmer O. Fippin and James L. Burgess, pp. 925-950.  
 Ohio, Coshocton area, by Thomas D. Rice and W. J. Gelb, pp. 565-580.  
 Ohio, Wooster area, by Thomas A. Caine and W. S. Lyman, pp. 543-564.  
 Pennsylvania, Adams County, by Henry J. Wilder and H. L. Belden, pp. 119-150.  
 Rhode Island, by F. E. Bonsteel and E. P. Carr, pp. 47-72.  
 South Carolina, Charlestown area, by F. E. Bonsteel and E. P. Carr, pp. 207-230.  
 South Carolina, Lancaster County, by Aldert S. Root and L. A. Hurst, pp. 169-184.  
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 Tennessee-North Carolina, Greeneville area, by Charles N. Mooney and O. L. Ayrs, pp. 493-526.  
 Tennessee, Lawrence County, by Charles N. Mooney and O. L. Ayrs, pp. 475-492.  
 Texas, Anderson County, by William T. Carter, jr., and A. E. Kocher, pp. 397-420.  
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 Texas, San Antonio area, by Thomas A. Caine and W. S. Lyman, pp. 447-474.  
 Utah, Bear River area, by Charles A. Jensen and A. T. Strahorn, pp. 995-1024.  
 Vermont-New York, Vergennes area, by Henry J. Wilder and H. L. Belden, pp. 73-94.  
 Virginia, Appomattox County, by Thomas A. Caine and Hugh H. Bennett, pp. 151-168.  
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**2571.** Field operations of the Bureau of Soils, 1905.—U. S. Dept. Agric., Bureau of Soils, Seventh Report, Washington, 1907. 1089 pp., 2 pls., 45 figs., and 47 soil maps (in separate case).

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- Alabama, Blount County, by William G. Smith and F. N. Meeker, pp. 407-424.  
 Alabama, Dallas County, by E. P. Carr and others, pp. 453-472.  
 Alabama, Lauderdale County, by F. E. Bonsteel and others, pp. 389-405.  
 Alabama, Montgomery County, by W. E. McLendon and Charles J. Mann, pp. 425-452.  
 California, Stockton area, by Macy H. Lapham and W. W. Mackie, pp. 997-1031.  
 Colorado, Grand Junction area, by J. Garnett Holmes and Thomas D. Rice, pp. 949-974.  
 Florida, Leon County, by Henry J. Wilder and others, pp. 363-388.  
 Georgia, Spalding County, by J. E. Lapham and others, pp. 351-361.  
 Indiana, Newton County, by N. P. Neill and W. E. Tharp, pp. 747-779.  
 Indiana, Tippecanoe County, by N. P. Neill and W. E. Tharp, pp. 781-813.  
 Kansas, Brown County, by James L. Burgess and others, pp. 911-926.  
 Kentucky, McCracken County, by Thomas D. Rice, pp. 679-694.  
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 Louisiana, Tangipahoa Parish, by A. M. Griffen and Thomas A. Caine, pp. 493-515.  
 Michigan, Oxford area, by Grove B. Jones and M. Earl Carr, pp. 731-745.  
 Minnesota, Carlton area, by W. J. Gelb and Grove B. Jones, pp. 815-835.

**Whitney, Milton, and others—Continued.**

- Mississippi, Crystal Springs area, by James L. Burgess and W. E. Tharp, pp. 473-491.  
 Missouri, Crawford County, by W. Edward Hearn and Charles J. Mann, pp. 865-878.  
 Missouri, Scotland County, by W. Edward Hearn and Charles J. Mann, pp. 879-892.  
 Montana, Gallatin Valley, by Macy H. Lapham and Charles W. Ely, pp. 975-996.  
 Nebraska, Sarpy County, by A. E. Kocher and Lewis A. Hurst, pp. 893-909.  
 New York, Binghamton area, by Elmer O. Fipplin and William T. Carter, jr., pp. 71-96.  
 New York, Tompkins County, by Jay A. Bonsteel and others, pp. 39-70.  
 North Carolina, Duplin County, by Aldert S. Root and Lewis A. Hurst, pp. 289-307.  
 North Carolina, Perquimans and Pasquotank counties, by J. E. Lapham and W. S. Lyman, pp. 271-288.  
 North Dakota, Carrington area, by A. E. Kocher and Lewis A. Hurst, pp. 927-948.  
 Ohio, Cleveland area, by J. E. Lapham and Charles N. Mooney, pp. 695-714.  
 Ohio, Westerville area, by J. E. Lapham and Charles N. Mooney, pp. 715-729.  
 Pennsylvania, Chester County, by Henry J. Wilder and others, pp. 135-174.  
 Pennsylvania, Montgomery County, by Henry J. Wilder and others, pp. 97-133.  
 South Carolina, Cherokee County, by J. A. Drake and H. L. Belden, pp. 333-349.  
 South Carolina, York County, by J. A. Drake and H. L. Belden, pp. 309-332.  
 Tennessee, Henderson County, by M. Earl Carr and Frank Bennett, pp. 643-657.  
 Texas, Houston County, by William T. Carter, jr., and A. E. Kocher, pp. 537-565.  
 Texas, Lavaca County, by Charles N. Mooney and others, pp. 623-642.  
 Texas, Lee County, by James L. Burgess and W. S. Lyman, pp. 601-621.  
 Texas, Waco area, by A. W. Mangum and M. Earl Carr, pp. 567-599.  
 Virginia, Hanover County, by Hugh H. Bennett and W. E. McLendon, pp. 213-245.  
 Virginia, Louisa County, by Hugh H. Bennett and W. E. McLendon, pp. 191-212.  
 Virginia, Yorktown area, by R. T. Avon Burke and Aldert S. Root, pp. 247-270.  
 Washington, Everett area, by E. P. Carr and A. W. Mangum, pp. 1053-1079.  
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2575. Dinosaurian gastroliths.—Science, new ser., vol. 23, pp. 819-821, May 25, 1906.

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**Wilder, Frank Alonzo.**

2577. The lignite coals of North Dakota.—Econ. Geology, vol. 1, no. 7, pp. 674-681, 1906.

Describes the extent and geologic horizon of the lignite deposits of North Dakota and the character and fuel efficiency of the lignite coals of North Dakota.

2578. Fourteenth annual report of the state geologist [Iowa].—Iowa Geol. Survey, vol. 16, pp. 1-12, 1 pl., 1906.

An administrative report outlining the work done and indicating future work and its needs.

2579. Memoir of Albert Allen Wright [1846-1905].—Geol. Soc. America, Bull., vol. 17, pp. 687-690, 1907.

Gives also a list of his publications.

**Willcox, Oswin W.**

**2580.** The viscous vs. the granular theory of glacial motion. Long Branch, N. J. Published by the author, 1906. 23 pp.

**2581.** The iron concretions of the Redbank sands.—*Jour. Geology*, vol. 14, no. 3, pp. 243-252, 8 figs., 1906.

Describes the occurrence and character of these concretions and discusses the mode of their formation.

**Williams, H. J. Carnegie.**

**2582.** The Bruce Mines, Ontario, 1846-1906.—*Canadian Min. Jour.*, vol. 28, no. 4 (new ser., vol. 1, no. 2), pp. 47-51, 4 figs., April 1, 1907.

Includes notes on the local geology and the occurrence of the copper ores.

**Williams, Henry Shaler.**

**2583.** The Devonian section of Ithaca, N. Y.—*Jour. Geology*, vol. 14, no. 7, pp. 579-598, 1906.

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**2584.** Revision of the geological section passing through Ithaca, N. Y.—*Abstract: Science*, new ser., vol. 24, pp. 365-367, September 21, 1906.

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**2588.** Geology of Franklin County [Iowa].—*Iowa Geol. Survey*, vol. 16, pp. 453-507, geol. maps, 10 figs., 1906.

Describes the topography and drainage, the stratigraphy, including Devonian and Carboniferous stratified rocks and glacial deposits, and the economic products.

The materials and manufacture of Portland cement.—See Beyer and Williams, no. 233.

The geology of Iowa quarry products.—See Beyer and Williams, no. 234.

**Willimott, C. W.**

**2589.** The mineral pigments of Canada.—*Canada Geol. Survey*, 39 pp., 1906.

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**Willis, Bailey.**

**2590.** Geologic research in continental histories.—*Carnegie Inst. of Washington, Yearb.* no. 4, 1905, pp. 204-214, 1906.

**2591.** Carte géologique de l'Amérique du Nord. 1906. Scale 1:5,000,000. Prepared for the Congrès géologique international, X<sup>e</sup> session, Mexico, 1906.

**2592.** Geographic history of Potomac River.—*U. S. Geol. Survey, W.-S. and Irr. Paper* no. 192, pp. 7-22, 1 pl., 1907.

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**2594.** Carte géologique de l'Amérique du Nord.—*Congr. géol. intern., C. R.* 10<sup>e</sup> sess., Mexico, 1906, pp. 211-225, 1907.

Describes the construction, nomenclature, classification, and coloring of the geological map of North America prepared for the International Geological Congress, held in Mexico, 1906.

**2595.** The Appalachian revolution.—*Abstract: Science*, new ser., vol. 25, p. 867, May 31, 1907.

Willis, Bailey—Continued.

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2598. A theory of continental structure applied to North America.—Geol. Soc. America, Bull., vol. 18, pp. 389-412, October, 1907.

Williston, Samuel W.

2599. American amphiœlian crocodiles.—Jour. Geology, vol. 14, no. 1, pp. 1-17, 12 figs., 1906.

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2600. North American plesiosaurs: *Elasmosaurus*, *Cimoliasaurus*, and *Polycotylus*.—Am. Jour. Sci., 4th ser., vol. 21, pp. 221-236, 4 pls., 5 figs., March, 1906.

Discusses characters and relationships and gives descriptions of various species.

2601. The skull of *Brachauchenius*, with observations on the relationships of the Plesiosaurs.—U. S. Nat. Mus., Proc., vol. 32, pp. 477-489, 4 pls., June 15, 1907.

Willmott, A. B.

2602. Michipicoten Island [Ontario].—Canadian Min. Jour., vol. 28, no. 15 (new ser., vol. 1, no. 13), pp. 398-400, 1 fig., September 15, 1907.

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2603. The origin of deposits of pyrites.—Canadian Min. Jour., vol. 28, no. 18 (new ser., vol. 1, no. 16), pp. 500-503, November 1, 1907.

Wilson, Alfred W. G.

2604. James Bay exploration, 1905. Report of the geologist.—Temiskaming and Northern Ontario Railway Commission, 4th Ann. Rept., pp. 57-65, Toronto, 1906.

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2605. On the glaciation of Orford and Sutton mountains, Quebec.—Am. Jour. Sci., 4th ser., vol. 21, pp. 196-205, 5 figs., March, 1906.

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2607. A travertine deposit in Tippecanoe County, Indiana.—Indiana Acad. Sci., Proc., 1905, pp. 183-184, 1906.

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2608. Notes on the glacial geology of Nantucket and Cape Cod.—Abstract: Science, new ser., vol. 23, p. 389, March 9, 1906.

2609. Deposit of Venus shells in New York City.—Science, new ser., vol. 23, pp. 821-822, May 25, 1906.

2610. The glacial history of Nantucket and Cape Cod. With an argument for a fourth center of glacial dispersion in North America. New York, 1906, 90 pp., 38 pls., 13 figs.

Describes the preglacial and glacial formations of Nantucket Island and presents the evidence in favor of a Newfoundland center of ice dispersion in explanation of the glacial phenomena described.

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**2613.** Shore topography near Davenport, Santa Cruz County [California].—California Phys. Geog. Club, vol. 1, no. 2, pp. 11-17, 2 pls., October, 1907.

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**2614.** [Report on] the region between Lake Temagami and Spanish River.—Canada, Geol. Survey, Summ. Rept. for 1905, pp. 82-84, 1906.

Gives an outline of the work done in making a survey of the area.

**2615.** On explorations along the proposed line of the Transcontinental Railway from Lake Abitibi eastward.—Canada, Geol. Survey, Summ. Rept. for 1906, pp. 119-123, 1906.

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**Winchell, Alexander N.**

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- Geological survey, history of: Prosser, 1960.  
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 Paleorhinus, skull of: Lees, 1551.  
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 Wasatch and Wind River rodents: Loomis, 1614.  
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- Bighorn Mountains: Darton, 647.

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- Anaktuvuk series, Cretaceous, Alaska: Brooks, 313.
- Anamosa substage, Silurian, Iowa: Beyer and Williams, 234.
- Anderson-Spartanburg zone, Archean, South Carolina: Sloan, 2218.
- Andrews schist, Cambrian, North Carolina: Keith, 1352.
- Animikie, Michigan: Gordon and Lane, 985.
- Animikie formation, pre-Cambrian, Ontario: Silver, 2212.
- Animikie sediments, pre-Cambrian, Ontario: Coleman, 539.
- Animikie series, Minnesota: Leith, 1557.
- Animus formation, Eocene, Colorado and New Mexico: Shaler, 2176.
- Ankareh formation, Carboniferous, Utah: Boutwell, 271.
- Anona chalk, Cretaceous, Arkansas: Veatch, 2436.
- Antietam formation, Cambrian, Maryland: Clark and Mathews, 488.
- Antietam sandstone, Cambrian, Pennsylvania: Stose, 2318.
- Antietam sandstone, Cambrian, West Virginia: Grimsley, 1044.
- Antrim shales, Devonian, Michigan: Cooper, 575; Lane, 1516.
- Apishapa formation, Cretaceous, Colorado: Darton, 648; Fisher, 869.
- Aquila formation, Eocene, Maryland: Clark and Mathews, 488; Shattuck *et al.*, 2193.
- Aquila formation, Tertiary, Maryland and Delaware: Miller, 1749.
- Aquila formation, Tertiary, Virginia: Clark and Miller, 489.
- Arapahoe formation, Cretaceous, Colorado: Darton, 648.
- Arcturus limestone, Carboniferous, Nevada: Lawson, 1526.
- Arkadelphia clay, Cretaceous, Arkansas: Veatch, 2436.
- Arpin quartzite, pre-Cambrian, Wisconsin: Weldman, 2512.
- Arriban series, Miocene, New Mexico: Keyes, 1390.
- Arundel formation, Jurassic?, Maryland: Clark and Mathews, 488.
- Arundel formation, Jurassic? and Cretaceous, Maryland: Shattuck *et al.*, 2193.
- Ashbed group, Cambrian, Michigan: Lane and Seaman, 1518.
- Ashley-Cooper marls, Eocene, South Carolina: Sloan, 2218.
- Ashnola gabbro, Paleozoic, Cascade Mountains: Daly, 632.
- Aspen formation, Cretaceous, Wyoming: Schultz, 2151.
- Athens, Carboniferous, Appalachian region: Stevenson, 2295.
- Athens shale, Ordovician, Tennessee: Keith, 1354.
- Athens shale, Ordovician, Virginia: Bassler, 158.
- Atlas formation, California: Lawson, 1528.
- Atoka formation, Carboniferous, Arkansas: Collier, 556.
- Aubrey limestone, Carboniferous, Montana: Reagan, 1099.
- Aubrey limestone, Carboniferous, Utah: Lee, 1544.
- Austin chalk, Cretaceous, Texas: Ries, 2058; Udden, 2408.
- Aylmer formation, Ordovician, Canada: Raymond, 1987.
- Bad River gabbro, Algonkian, Michigan: Gordon and Lane, 985.
- Bagley andesite, Jurassic, California: Diller, 721.
- Baird formation, Carboniferous, California: Diller, 721.
- Balaskala rhyolite, pre-Devonian, California: Diller, 721.
- Baltic conglomerate, Algonkian, Michigan: Lane, 1509.
- Baltimore gneiss, Algonkian, Maryland: Clark and Mathews, 488.
- Bandera shale, Pennsylvanian, Kansas: Schrader and Haworth, 2144; Wooster, 2636.
- Banff limestone, Carboniferous, Alberta: Dowling, 736.
- Banff shale (lower), Carboniferous, Alberta: Dowling, 736.
- Banff shale (upper), Permo-Triassic, Alberta: Dowling, 736.
- Bangor limestone, Carboniferous, Alabama: Butts, 370.
- Bangor (Chester) limestone, Mississippian, Alabama: Smith, 2229.
- Barclay limestone, Carboniferous, Kansas: Wooster, 2636.
- Barkersville gabbro, Triassic?, North Carolina: Keith, 1354.
- Barnwell buhr sands, Eocene, South Carolina: Sloan, 2218.

- Bashi formation, Eocene, Alabama : Smith, 2229.
- Bass Mountain diabase, Carboniferous, California : Diller, 721.
- Battle quartzite, Cambrian, Maine : Smith *et al.*, 2241.
- Bayport formation, Carboniferous, Michigan : Cooper, 575.
- Bayport limestone, Michigan : Lane, 1508.
- Bayport or Maxville limestone, Mississippian, Michigan : Lane, 1516.
- Bays sandstone, Ordovician, Virginia : Bassler, 158.
- Bearpaw shales, Cretaceous, Alberta : Cairnes, 381 ; Dowling, 735.
- Bear River formation, Cretaceous, Wyoming : Schultz, 2151 ; Veatch, 2437.
- Beaumont clays, Pleistocene, Texas : Fenneman, 859 ; Ries, 2058.
- Beaver, Carboniferous, Appalachian region : Stevenson, 2295.
- Beaver limestone, Cambrian, Georgia : Watson, 2483.
- Becket gneiss, pre-Cambrian, Connecticut : Gregory, 1034 ; Gregory and Robinson, 1038.
- Becraft limestone, Devonian, New York : Grabau, 991.
- Becraft member, Devonian, Maryland : Clark and Mathews, 488.
- Bedford oolitic limestone, Mississippian, Indiana : Blatchley, 246.
- Bedrock series, California : Reid, 2018.
- Beech granite, Archean, North Carolina and Tennessee : Keith, 1354.
- Beekmantown beds, Ordovician, New York : Ruedemann, 2097.
- Beekmantown formation, Ordovician, Vermont : Seely, 2164.
- Belknap dike, New Hampshire : Pirsson and Washington, 1934.
- Bellepoint member of Columbus formation, Devonian, Ohio : Swartz, 2329.
- Bellingham conglomerate, Massachusetts : Mansfield, 1674.
- Belmont porphyry dikes, Montana : Barrell, 149.
- Beloit formation, Ordovician, upper Mississippi Valley : Sardeson, 2122.
- Belt group, Algonkian, Montana : Barrell, 149.
- Belt terrane, Algonkian, Montana : Warner, 2477.
- Benning granite, Georgia : Lindgren, 1596.
- Benton formation, Cretaceous, Montana : Rowe, 2090.
- Benton formation, Cretaceous, Wyoming : Veatch, 2440.
- Benton group, Cretaceous, Nebraska : Condra, 570.
- Benton shale, Cretaceous, Colorado : Gale, 922.
- Benton shale, Cretaceous, North Dakota : Leonard, 1563.
- Benton shales, Cretaceous, Alberta : Cairnes, 381.
- Benwood limestone, Carboniferous, Appalachian region : Stevenson, 2295.
- Benwood limestone, Carboniferous, Pennsylvania : Clapp, 475.
- Benwood limestone, Carboniferous, West Virginia : Grimsley, 1046.
- Berea grit, Mississippian, Michigan : Lane, 1516.
- Berea sandstone, Carboniferous, Pennsylvania : Woolsey, 2634.
- Berenda formation, Carboniferous, New Mexico : Keyes, 1377.
- Bergman series, Cretaceous, Alaska : Brooks, 313.
- Berkshire schist, Ordovician, Connecticut : Gregory and Robinson, 1038.
- Berkshire (Hudson) schist, Connecticut : Gregory, 1034.
- Bertle waterlime, Silurian, New York : Clarke, 494 ; Hartnagel, 1085 ; Luther, 1633.
- Bethany Falls limestone, Carboniferous, Kansas : Wooster, 2636.
- Bighorn limestone, Ordovician, Wyoming : Darton, 642, 644-647 ; Fisher, 873.
- Bijlki formation, pre-Cambrian, Michigan : Lane and Seaman, 1518.
- Bijlki (Ironwood), Michigan : Gordon and Lane, 985.
- Binary granite, Colorado : Underhill, 2414.
- Bingen sand, Cretaceous, Arkansas : Veatch, 2436.
- Binnewater quartzite, Silurian, New York : Hartnagel, 1084.
- Binnewater sandstone, Silurian, New York : Grabau, 991.
- Birch Creek formation, pre-Devonian, Alaska : Prindle, 1956.
- Birch Creek schists, Alaska : Brooks, 313.
- Birmingham shale, Carboniferous, West Virginia : Grimsley, 1044, 1046.
- Black Creek shale, Cretaceous, South Carolina : Sloan, 2218.
- Blackfoot formation, pre-Cambrian, Montana : Emmons, 806.
- Blackfoot series, Algonkian, Montana : Walcott, 2470.
- Black Hand formation, Carboniferous, Ohio : Carney, 427.
- Black Mingo shales, Eocene, South Carolina : Sloan, 2218.
- Black River, Ordovician, Ontario : Ellis, 788.
- Blackville limestone, Carboniferous, Appalachian region : Stevenson, 2295.
- Bladen formation, Cretaceous, North Carolina : Stephenson, 2281.
- Blanco formation, Tertiary, Texas : Gould, 986.
- Bloyd shale, Pennsylvania, Arkansas : Purdue, 1971.
- Blue chert series, Devonian, California : Hershey, 1133.
- Bluff formation, Quaternary, Mississippi : Logan, 1608.
- Boggy formation, Carboniferous, Indian Territory : Taft, 2332.

- Bohemian Range group, Cambrian, Michigan: Lane and Seaman, 1518.
- Bohicket marl-sand, Pleistocene, South Carolina: Sloan, 2218.
- Bohio formation, Eocene, Panama: Howe, 1244.
- Bollivar fire clay, Carboniferous, West Virginia: Grimsley, 1046.
- Bolton schist, Connecticut: Gregory, 1034; Gregory and Robinson, 1038.
- Bonneferre limestone, Cambrian, Missouri: Shepard, 2194.
- Boone chert, Carboniferous, Arkansas: Purdue, 1970.
- Boone formation, Mississippian, Arkansas: Purdue, 1971.
- Boone formation, Mississippian, Indian Territory: Taff, 2332.
- Boone formation, Mississippian, Kansas: Schrader and Haworth, 2144.
- Boquillas flags, Cretaceous, Texas: Udden, 2409.
- Boss Mountain diabase, Carboniferous, California: Diller, 721.
- Bowler formation, Triassic? and Permian, Montana: Rowe, 2090.
- Bow River series, Canada: Walcott, 2470.
- Boyle limestone, Devonian, Kentucky: Foerste, 884.
- Bradford schist, Vermont: Richardson, 2037.
- Bragdon formation, California: Hershey, 1133.
- Bragdon formation, Carboniferous, California: Diller, 721.
- Brainard shales, Ordovician, Iowa: Calvin, 388.
- Branford granite-gneiss, Connecticut: Gregory, 1034; Gregory and Robinson, 1038.
- Brassfield limestone, Silurian, Kentucky: Foerste, 883, 884.
- Brasstown schist, Cambrian, North Carolina: Keith, 1352.
- Brayman shales, Silurian, New York: Grabau, 991.
- Brentwood limestone lentil, Pennsylvania, Arkansas: Purdue, 1971.
- Brevard schist, Cambrian, North Carolina and South Carolina: Keith, 1353.
- Bridger group, Tertiary, Wyoming: Sinclair, 2214.
- Bridger formation, Tertiary, Wyoming: Veatch, 2437.
- Brier Creek marl, Oligocene, South Carolina: Sloan, 2218.
- Brimfield schist, Connecticut: Gregory, 1034; Gregory and Robinson, 1038.
- Bristol granite-gneiss, Connecticut: Gregory, 1034; Gregory and Robinson, 1038.
- Brock shale, Triassic, California: Diller, 721.
- Bromley formation, Ordovician, Kentucky: Bassler, 156.
- Bronson beds, Carboniferous, Kansas: Wooster, 2636.
- Brookfield diorite, Connecticut: Gregory, 1034; Gregory and Robinson, 1038.
- Brownstown formation, Cretaceous, Arkansas: Veatch, 2436.
- Brush Creek limestone, Carboniferous, Pennsylvania: Stevenson, 2294.
- Brush Creek limestone, Carboniferous, West Virginia: Grimsley, 1046.
- Bryson formation, Carboniferous, Kentucky: Ashley and Glenn, 77.
- Buchanan gravels, Pleistocene, Iowa: Arey, 53; Calvin, 388; Leonard, 1559; Macbride, 1639; Norton, 1805; Williams, 2588.
- Buda limestone, Cretaceous, Texas: Udden, 2408-2409.
- Buffalo sandstone, Carboniferous, Pennsylvania: Stevenson, 2294.
- Buffalo sandstone, Carboniferous, West Virginia: Grimsley, 1044, 1046.
- Bully Hill rhyolite, Triassic, California: Diller, 721.
- Burches Ferry marl, Cretaceous, South Carolina: Sloan, 2218.
- Burden conglomerate, Ordovician, New York: Grabau, 991.
- Burgen sandstone, Ordovician, Indian Territory: Taff, 2332.
- Burgoon sandstone, Mississippian, Pennsylvania: Butts, 368; Woolsey, 2634.
- Burke formation, Algonkian, Montana: Walcott, 2470.
- Burlingame shales, Carboniferous, Kansas: Wooster, 2636.
- Burlington limestone, Mississippian, Illinois: Weller, 2523.
- Burlington limestones, Mississippian, Iowa: Beyer and Williams, 234.
- Burlington limestone, Mississippian, Missouri: Shepard, 2194.
- Burns tuff, Oligocene, Colorado: Cross *et al.*, 607.
- Burro gravels and tuffs, Tertiary, Texas: Udden, 2409.
- Bushberg sandstone, Mississippian, Missouri: Weller, 2519.
- Butler sandstone, Carboniferous, Pennsylvania: Butts, 268; Woolsey, 2634.
- Buxton formation, Pennsylvanian, Kansas: Schrader and Haworth, 2144.
- Cable formation, California: Lawson, 1528.
- Cacapon sandstone, Silurian, West Virginia: Grimsley, 1044.
- Cache Creek group, Devonian, British Columbia: Brooks, 313.
- Calceiferous, Michigan: Lane, 1508.
- Calceiferous, Ordovician, Ontario: Ellis, 788.
- Calceiferous formation, Ordovician, Michigan: Lane and Seaman, 1518.
- Calderwood formation, Cambrian, Maine: Smith *et al.*, 2241.
- Calhoun shales, Carboniferous, Kansas: Wooster, 2636.
- Calvert formation, Miocene, Maryland: Clark and Mathews, 488; Shattuck, 2185, 2188, 2191; Shattuck *et al.*, 2193.
- Calvert formation, Tertiary, Virginia: Clark and Miller, 489.



- Calvert formation, Tertiary, Maryland and Delaware: Miller, 1749.
- Cambridge limestone, Carboniferous, Pennsylvania: Butts, 368; Stevenson, 2294.
- Cambridge limestone, Carboniferous, Pennsylvania, Ohio, and West Virginia: Griswold and Munn, 1048.
- Cambridge limestone, Carboniferous, West Virginia: Grimsley, 1044, 1046.
- Camillus shale, Silurian, New York: Hartnagel, 1085; Luther, 1633.
- Campbell's Creek limestone, Carboniferous, West Virginia: Grimsley, 1044.
- Camp Creek formation, pre-Cambrian, Montana: Emmons, 806.
- Camp Creek series, Algonkian, Montana: Walcott, 2470.
- Camp Nelson, Ordovician, Kentucky: Miller, 1748.
- Cannelton limestone, Carboniferous, West Virginia: Grimsley, 1044.
- Canterbury granite-gneiss, Connecticut: Gregory, 1034; Gregory and Robinson, 1038.
- Canwell formation, Tertiary, Alaska: Brooks, 313.
- Canyon formation, Carboniferous, Texas: Ries, 2058.
- Canyon Largo sandstones, Eocene, New Mexico: Keyes, 1388, 1390.
- Capefear formation, Jurassic?, North Carolina: Stephenson, 2281.
- Cape Girardeau limestone, Ordovician, Illinois: Weller, 2517, 2524.
- Capitan limestone, Carboniferous, New Mexico: Keyes, 1377.
- Cardiff quartzite, Algonkian, Maryland: Clark and Mathews, 488.
- Cardiff shale, Devonian, New York: Luther, 1633.
- Carlile formation, Cretaceous, Colorado: Darton, 648; Fisher, 869.
- Carlile shale, Cretaceous, Nebraska: Condra, 570.
- Carlile shale, Cretaceous, Wyoming: Darton and O'Hara, 656.
- Carlisle limestone, Carboniferous, Kansas: Wooster, 2636.
- Carmichaels formation, Pleistocene, Pennsylvania: Clapp, 475, 476.
- Carmichaels formation, Quaternary, Pennsylvania: Butts, 368.
- Carolina gneiss, Archean, North Carolina: Keith, 1352, 1354.
- Carolina gneiss, Archean, North Carolina and South Carolina: Keith, 1353.
- Cashaqua shale, Devonian, New York: Luther, 1633, 1634.
- Cason shale, Ordovician, Arkansas: Purdue, 1970.
- Cassville plant shale, Carboniferous, West Virginia: Grimsley, 1046.
- Cassville shale, Carboniferous, Appalachian region: Stevenson, 2295.
- Cassville shale, Carboniferous, Pennsylvania: Clapp, 475.
- Castine formation, Cambrian, Maine: Smith *et al*, 2241.
- Catahoula formation, Tertiary, Louisiana: Veatch, 2436, 2437.
- Cathedral granite, Tertiary, Cascade Mountains: Daly, 632.
- Catron formation, Carboniferous, Kentucky: Ashley and Glenn, 77.
- Catskill formation, Devonian, Pennsylvania: Butts, 367.
- Catskill formation, Devonian, West Virginia: Grimsley, 1044.
- Catskill member, Devonian, Pennsylvania: Clapp, 475.
- Catskill series, Devonian, New York: Graebau, 991.
- Cave Creek gypsum, Permian, Kansas: Wooster, 2636.
- Cave Springs sandstone, Carboniferous, Kansas: Wooster, 2636.
- Cawood sandstone member, Carboniferous, Kentucky: Ashley and Glenn, 77.
- Cayuga formation, Silurian, Maryland: Clark and Mathews, 488.
- Cayuga group, Silurian, Wisconsin: Alden, 23.
- Cayuta shale member, Devonian, New York: Williams, 2583.
- Cedar Hill sandstones, Permian, Kansas: Wooster, 2636.
- Cedar Point shales and limestones, Permian, Kansas: Wooster, 2636.
- Cedar Valley limestone, Devonian, Iowa: Calvin, 387, 388.
- Cedar Valley stage, Devonian, Iowa: Arey, 53; Norton, 1805.
- Central City granite, Colorado: Underhill, 2412.
- Central (Mine) group, Cambrian, Michigan: Lane and Seaman, 1518.
- Chaco marls, Eocene, New Mexico: Keyes, 1388, 1390.
- Chagrin formation, Devonian, Kentucky: Foerste, 883.
- Chama clays, Miocene, New Mexico: Keyes, 1388.
- Chaman series, Eocene, New Mexico: Keyes, 1390.
- Chamberlain shale, Algonkian, Montana: Rowe, 2090.
- Chambersburg formation, Ordovician, Virginia: Bassler, 158.
- Chambersburg limestone, Ordovician, Maryland: Clark and Mathews, 488.
- Chambersburg limestone, Ordovician, Pennsylvania: Stose, 2318.
- Chanute shale, Pennsylvanian, Kansas: Beede and Rogers, 181; Schrader and Haworth, 2144; Wooster, 2636.
- Chariton conglomerate, Pennsylvanian, Iowa: Beyer and Williams, 234.
- Chatoga zone, Archean, South Carolina: Sloan, 2218.
- Chattahoochee, Tertiary, Georgia: Harper, 1077.

- Chattahoochee series, Miocene, Alabama : Smith, 2229.
- Chattahoochee series, Tertiary, Gulf region : Smith, 2226.
- Chattanooga shale, Devonian, Indian Territory : Taff, 2332.
- Chauga zone, Cambrian?, South Carolina : Sloan, 2218.
- Chautauqua sandstone, Carboniferous, Kansas : Wooster, 2636.
- Chazy, Ordovician, Ontario : Ellis, 788.
- Chazy beds, Ordovician, New York, Ruedemann, 2097.
- Chazy formation, Ordovician, Vermont : Seely, 2164.
- Chazy limestone, Ordovician, Vermont : Edson, 774.
- Chazy limestone, Ordovician, New York, Vermont, and Canada : Raymond, 1987.
- Chelmsford sandstone, Canada : Coleman, 546.
- Chelmsford sandstone, pre-Cambrian, Ontario : Coleman, 539.
- Chemung formation, Devonian, New York : Williams, 2583.
- Chemung formation, Devonian, Pennsylvania : Butts, 367; Clapp, 475, 477.
- Chemung formation, Devonian, West Virginia : Grimsley, 1044.
- Chemung group, Devonian, New York : Williams, 2586.
- Chemung member, Devonian, Maryland : Clark and Mathews, 488.
- Chemung sandstones, Devonian, New York : Luther, 1634.
- Cheraw cobbles, Pleistocene, South Carolina : Sloan, 2218.
- Cherokee shale, Pennsylvanian, Kansas : Schrader and Haworth, 2144; Wooster, 2636.
- Cherokee shale, Pennsylvanian, Missouri : Shepard, 2194.
- Cherokee zone, Cambrian?, South Carolina : Sloan, 2218.
- Cherryvale shale, Pennsylvanian, Kansas : Schrader and Haworth, 2144; Wooster, 2636.
- Chesapeake group, Miocene, Maryland : Clark and Mathews, 488; Shattuck, 2188, 2191; Shattuck *et al.*, 2193.
- Chester formation, Mississippian, Mississippi : Crider, 595.
- Chester group, Mississippian, Missouri : Shepard, 2194.
- Chickamauga limestone, Ordovician, Alabama : Butts, 370.
- Chickamauga limestone, Ordovician, Virginia : Bassler, 158.
- Chickasaw (Wilcox) group, Eocene, Alabama : Smith, 2229.
- Chico formation, Cretaceous, California : Diller, 721.
- Chico series, Cretaceous, California : Crandall, 590.
- Chippewa felsite, Algonkian, Michigan : Gordon and Lane, 985.
- Chisna group, Devonian, Alaska : Brooks, 313.
- Chisos beds, Cretaceous, Texas : Udden, 2409.
- Chittstone limestone, Alaska : Brooks, 313.
- Chopaka intrusive, Paleozoic, Cascade Mountains : Daly, 632.
- Choptank formation, Miocene, Maryland : Clark and Mathews, 488; Shattuck, 2185, 2188, 2191; Shattuck, *et al.*, 2193.
- Choptank formation, Tertiary, Virginia : Clark and Miller, 489.
- Chouteau limestone, Mississippian, Illinois : Weller, 2523.
- Chouteau limestone, Mississippian, Missouri : Shepard, 2194.
- Chugwater formation, Triassic?, Wyoming : Darton, 642, 644-647; Fisher, 873.
- Cibolo limestone, Carboniferous, Texas : Udden, 2409.
- Cimarron Creek latite, Colorado : Cross *et al.*, 607.
- Cimarronian<sup>+</sup> series, Carboniferous, New Mexico : Keyes, 1377.
- Cincinnati formation, Ordovician, Wisconsin : Alden, 23.
- Cincinnati formation, Ordovician, Illinois : Weller, 2517, 2524.
- Cisco formation, Carboniferous, Texas : Ries, 2058.
- Claggett formation, Cretaceous, Alberta : Cairnes, 381; Dowling, 735.
- Clalborne formation, Eocene, Mississippi : Logan, 1608.
- Clalborne formation, Tertiary, Louisiana and Arkansas : Veatch, 2436, 2437.
- Clalborne group, Eocene, Alabama : Smith, 2229.
- Clalborne group, Tertiary, Mississippi : Crider, 595; Crider and Johnson, 599.
- Clalborne stage, Eocene, Louisiana : Harris, 1079.
- Clallam formation, Tertiary, Washington : Arnold, 56.
- Clarion sandstone, Carboniferous, Pennsylvania : Butts, 368.
- Clarksburg limestone, Carboniferous, West Virginia : Grimsley, 1044, 1046.
- Claysville limestone, Carboniferous, Pennsylvania, Ohio, and West Virginia : Griswold and Munn, 1048.
- Clayton formation, Tertiary, Mississippi : Crider, 595; Crider and Johnson, 599.
- Clayton limestone, Eocene, Alabama : Smith, 2229.
- Clayton limestone, Eocene, Mississippi : Logan, 1608.
- Clear Creek gneiss, Colorado : Underhill, 2414.
- Clear Fork division of the Red Beds, Permian, Texas : Case, 443.
- Clermont shale, Ordovician, Iowa : Calvin, 388.
- Clinch ("Medina"), Virginia : Eckel, 765.
- Clinch sandstone, Ordovician, Virginia : Bassler, 158.

- Clinton formation, Silurian, Maryland: Clark and Mathews, 488.
- Clinton formation, Silurian, New York: Hartnagel, 1085.
- Clinton formation, Silurian, West Virginia: Grimsley, 1044.
- Cloverly formation, Cretaceous, Montana: Darton, 652.
- Cloverly formation, Cretaceous, Wyoming: Darton, 642, 644-647; Fisher, 873.
- Coastal group, Canada: Ellis, 784.
- Cobleskill dolomite, Silurian, New York: Clarke, 499.
- Cobleskill limestone, Silurian, New York: Grabau, 991; Hartnagel, 1084.
- Cobleskill waterlime, Silurian, New York: Luther, 1633.
- Cochran conglomerate, Cambrian, Tennessee: Keith, 1354.
- Cockeysville marble, Algonkian, Maryland: Clark and Mathews, 488.
- Cockfield member, Tertiary, Louisiana and Arkansas: Veatch, 2436, 2437.
- Cockfield member of Claiborne, Eocene, Louisiana: Harris, 1079.
- Coeymans limestone, Devonian, New York: Grabau, 991; Hartnagel, 1084.
- Coeymans member, Devonian, Maryland: Clark and Mathews, 488.
- Coffeyville formation, Pennsylvanian, Kansas: Schrader and Haworth, 2144.
- Coggon limestone, Devonian, Iowa: Norton, 1805.
- Coldbrook group, pre-Cambrian, Canada: Ellis, 784.
- Coldwater series, Mississippian, Michigan: Lane, 1516.
- Coldwater shale, Carboniferous, Michigan: Cooper, 575.
- Coldwater group, Tertiary, Yukon Territory: Brooks, 313.
- Collinsville granite-gneiss, Connecticut: Gregory, 1034; Gregory and Robinson, 1038.
- Colorado formation, Cretaceous, Canada: Dowling, 735.
- Colorado formation, Cretaceous, Iowa: Calvin, 387.
- Colorado formation, Cretaceous, Montana: Darton, 652.
- Colorado formation, Cretaceous, North Dakota: Leonard, 1563.
- Colorado formation, Cretaceous, Wyoming: Darton, 642, 644-647; Fisher, 873; Veatch, 2437.
- Columbia clay, Quaternary, Missouri: Shepard, 2194.
- Columbia formation, Mississippi: Brown, 326.
- Columbia formation, Pleistocene, South Carolina: Pugh, 1963.
- Columbia formation, Quaternary, Mississippi: Logan, 1608.
- Columbia formation, Quaternary, Tennessee, Kentucky, and Illinois: Glenn, 971.
- Columbia formation, Tertiary, Georgia: Harper, 1077.
- Columbia group, Pleistocene, Maryland: Clark and Mathews, 488; Shattuck, 2185, 2188, 2191; Shattuck *et al.*, 2193.
- Columbia group, Quaternary, Maryland and Delaware: Miller, 1749.
- Columbia sands, Pleistocene, South Carolina: Sloan, 2218.
- Columbia sands, Pleistocene, Texas: Fenneman, 859; Ries, 2058.
- Columbia Ford limestone, Carboniferous, Kansas: Wooster, 2636.
- Columbus formation, Devonian, Ohio: Swartz, 2329.
- Columbus limestone, Devonian, Kentucky: Foerste, 883.
- Columbus limestone, Devonian, Ohio: Stauffer, 2277, 2278.
- Colville, Tertiary, Alaska: Brooks, 313.
- Colvin limestone, Carboniferous, Appalachian region: Stevenson, 2295.
- Comanche series, Cretaceous, Arkansas: Veatch, 2436.
- Comanche series, Cretaceous, Colorado: Darton, 648.
- Combahee shale, Oligocene, South Carolina: Sloan, 2218.
- Conasauga limestone, Ordovician, Alabama: Butts, 370.
- Conasauga shales, Cambrian, Georgia: Watson, 2483.
- Concreto shale, Pennsylvanian, Kansas: Schrader and Haworth, 2144.
- Concreto (Lane) shale, Carboniferous, Kansas: Wooster, 2636.
- Conemaugh formation, Carboniferous, Pennsylvania: Butts, 368; Clapp, 475, 477; Stevenson, 2294; Woolsey, 2634.
- Conemaugh formation, Carboniferous, Pennsylvania, Ohio, and West Virginia: Griswold and Munn, 1048.
- Conemaugh formation, Pennsylvanian, Maryland: Clark and Mathews, 488.
- Conemaugh series, Carboniferous, West Virginia: Grimsley, 1044, 1046.
- Congaree shales, Eocene, South Carolina: Sloan, 2218.
- Connellsville sandstone, Carboniferous, West Virginia: Grimsley, 1044, 1046.
- Connoquenessing sandstone, Carboniferous, Pennsylvania: Butts, 368.
- Cooks Mountain beds, Tertiary, Texas: Fenneman, 859.
- Copley metaandesite, pre-Devonian, California: Diller, 721.
- Copper Harbor conglomerates, Cambrian, Michigan: Lane and Seaman, 1518.
- Cornwall shale, Devonian, New York: Hartnagel, 1084.
- Cortlandt series, Ordovician, New York: Berkey, 207.
- Corwin formation, Jurassic, Alaska: Collier, 552.

- Corwin series, Jurassic, Alaska: Brooks, 313.
- Cottonwood limestone, Carboniferous, Kansas: Beede and Rogers, 181; Wooster, 2636.
- Covington group, Ordovician, Ohio and Kentucky: Bassler, 156.
- Cowrun sandstone, Carboniferous, Pennsylvania: Stevenson, 2294.
- Coyote formation, Carboniferous, New Mexico: Keyes, 1377.
- Crab Orchard division, Silurian, Kentucky: Foerste, 883, 884.
- Cranberry granite, Archean, North Carolina and Tennessee: Keith, 1354.
- Crescent formation, Tertiary, Washington: Arnold, 56.
- Creston quartzite, Algonkian, Montana: Walcott, 2470.
- Creston quartzite, Idaho and Montana: Daly, 631.
- Cripple Creek granite, Colorado: Graton, 1026.
- Crown conglomerate, Cretaceous, Texas: Udden, 2409.
- Crown Point limestone, Ordovician, New York: Raymond, 1987.
- Crusher Hill shales and limestones, Permian, Kansas: Wooster, 2636.
- Cuchara formation, Cretaceous?, Colorado: Darton, 648.
- Culebra beds, Panama: Howe, 1245.
- Culebra formation, Tertiary, Panama: Howe, 1244.
- Curdsville, Ordovician, Kentucky: Miller, 1748.
- Cutler formation, Carboniferous (Permian?), Colorado: Cross *et al.*, 607.
- Cuyahoga formation, Carboniferous, Ohio: Carney, 427.
- Cuyuna series, Minnesota: Leith, 1557.
- Cynthiana formation, Ordovician, Kentucky: Foerste, 884.
- Dadina schists, Alaska: Brooks, 313.
- Dakota formation, Cretaceous, Alberta: Cairnes, 381; Dowling, 735.
- Dakota formation, Cretaceous, Colorado: Darton, 648; Fenneman and Gale, 863; Fisher, 869; Gale, 922.
- Dakota formation, Cretaceous, Iowa: Calvin, 387; Macbride, 1639.
- Dakota formation, Cretaceous, Montana: Rowe, 2090.
- Dakota formation, Cretaceous, Nebraska: Condra, 570; Woodruff, 2628.
- Dakota formation, Cretaceous, Wyoming: Veatch, 2440.
- Dakota sandstone, Cretaceous, Colorado: Cross *et al.*, 607.
- Dakota sandstone, Cretaceous, Colorado and New Mexico: Shaler, 2176.
- Dakota sandstone, Cretaceous, Wyoming: Darton and O'Harra, 656.
- Dakotan series, Cretaceous, New Mexico: Keyes, 1379.
- Danbury granodiorite-gneiss, Connecticut: Gregory, 1034; Gregory and Robinson, 1038.
- Davenport, lower, sub-stage, Iowa: Norton, 1805.
- Day Creek dolomite, Permian, Kansas: Wooster, 2636.
- Day Point limestone, Ordovician, New York: Raymond, 1987.
- Deadwood formation, Cambrian, Wyoming: Darton, 642, 644-647; Fisher, 873.
- Decker Ferry limestone, Silurian, New York: Hartnagel, 1084.
- Decorah shale, Ordovician, Iowa: Beyer and Williams, 234; Calvin, 388.
- Deer Creek limestone, Carboniferous, Kansas: Wooster, 2636.
- DeKalb limestone, Pennsylvanian, Iowa: Beyer and Williams, 234.
- Dekkas andesite, Triassic, California: Diller, 721.
- Delaware limestone, Devonian, Ohio: Stauffer, 2277, 2278; Swartz, 2329.
- Del Rio clay, Cretaceous, Texas: Udden, 2408, 2409.
- Denison formation, Cretaceous, Arkansas: Veatch, 2436.
- Dennis limestone, Carboniferous, Kansas: Beede and Rogers, 181; Schrader and Haworth, 2144; Wooster, 2636.
- Denver formation, Cretaceous?, Colorado: Darton, 648.
- De Smet formation, Cretaceous, Wyoming: Darton, 644-647.
- Des Moines formation, Carboniferous, Iowa: Calvin, 387; Savage, 2128.
- Des Moines group, Pennsylvanian, Missouri: Shepard, 2194.
- Des Moines stage, Pennsylvanian, Iowa: Beyer and Williams, 234.
- Devil's River limestone, Cretaceous, Texas: Udden, 2408.
- Devonshire formation, Bermuda Islands: Verrill, 2445.
- Difficulty Creek latite, Colorado, Cross *et al.*, 607.
- Dighton conglomerate, Massachusetts: Mansfield, 1674.
- Dillard series, Cretaceous, Oregon: Diller, 724.
- Dockum formation, Triassic, Texas: Gould, 986.
- Dockum group, Triassic, Texas: Gould, 987.
- Dog Creek shales, Permian, Kansas: Wooster, 2636.
- Dolores formation, Triassic, Colorado: Cross, 604; Cross *et al.*, 607.
- Don beds of Toronto formation, Quaternary, Canada: Coleman, 547.
- Donley limestone, Carboniferous, Pennsylvania, Ohio, and West Virginia: Griswold and Munn, 1048.
- Doré formation, Canada: Bell, 189.
- Dothan formation, Jurassic, Oregon: Diller, 724.

- Double Mountain division of the Red Beds, Permian, Texas: Case, 443.
- Dresbach formation, Cambrian, Iowa: Calvin, 387.
- Dresbach sandstone, Cambrian, Iowa: Beyer and Williams, 234.
- Drum formation, Pennsylvanian, Kansas: Schrader and Haworth, 2144.
- Drumlunnon porphyry dikes, Montana: Barrell, 149.
- Dry Creek shale, Devonian-Silurian, Montana: Emmons, 806.
- Dubuque formation, Ordovician, upper Mississippi Valley: Sardeson, 2122.
- Dudley shales, Carboniferous, Kansas: Beede and Rogers, 181; Wooster, 2636.
- Duffin layer, Devonian, Kentucky: Foerste, 883, 884.
- Dugout clays and gravels, Tertiary, Texas: Udden, 2409.
- Duluth gabbro, Algonkian, Minnesota: Abbott, 1.
- Dundee limestone, Devonian, Michigan: Cooper, 575; Lane, 1516.
- Dunkard formation, Carboniferous, Appalachian region: Stevenson, 2295.
- Dunkard formation, Permian, Maryland: Clark and Mathews, 488.
- Dunkard group, Carboniferous, Pennsylvania: Clapp, 475, 476.
- Dunkard group, Carboniferous (Permian), Pennsylvania: Clapp, 477.
- Dunkard series, Carboniferous, West Virginia: Grimsley, 1044, 1046.
- Eagle formation, Cretaceous, Canada: Dowling, 735.
- Eagle limestone, Carboniferous, West Virginia: Grimsley, 1044.
- Eagle Ford beds, Cretaceous, Texas: Udden, 2408.
- Eagle Ford formation, Cretaceous, Arkansas: Veatch, 2436.
- Eagle Ford formation, Cretaceous, Texas: Ries, 2058.
- Eagle Pass formation, Cretaceous, Texas: Udden, 2408.
- Eagle River group, Cambrian, Michigan: Lane and Seaman, 1518.
- Earlham limestone, Pennsylvanian, Iowa: Beyer and Williams, 234.
- Earlton limestone, Carboniferous, Kansas: Wooster, 2636.
- Eastford granite-gneiss, Connecticut: Gregory, 1034; Gregory and Robinson, 1038.
- East Greenwich group, early Carboniferous or late pre-Carboniferous: Emerson and Perry, 790.
- Easton schist, pre-Tertiary, Washington: Smith and Calkins, 2240.
- Economy member, Ordovician, Ohio and Kentucky: Bassler, 156.
- Eddy formation, Carboniferous, New Mexico: Keyes, 1377.
- Eden, Ordovician, Kentucky: Miller, 1748.
- Eden formation, Ordovician, Ohio and Kentucky: Bassler, 156.
- Eden shale, Ordovician, Pennsylvania: Stose, 2318.
- Eden shales and sandstones, Ordovician, Virginia: Bassler, 158.
- Edgefield-Chesterfield zone, Algonkian?, South Carolina: Sloan, 2218.
- Edisto marls, Miocene, South Carolina: Sloan, 2218.
- Edmonton formation, Cretaceous, Alberta: Cairnes, 381.
- Edmonton series, Cretaceous, Canada: Dowling, 735.
- Elbert formation, Devonian, Colorado: Cross *et al.*, 607.
- Elbrook limestone, Cambro-Ordovician, Pennsylvania: Stose, 2318.
- Elgin sandstone, Pennsylvanian, Kansas: Schrader and Haworth, 2144; Wooster, 2636.
- Elgin shaly limestones, Ordovician, Iowa: Calvin, 388.
- Elk Lick limestone, Carboniferous, West Virginia: Grimsley, 1044, 1046.
- Ellensburg formation, Tertiary, Washington: Smith and Calkins, 2240.
- Ellis formation, Cretaceous, Montana: Rowe, 2090.
- Ellsworth schist, Cambrian or pre-Cambrian, Maine: Smith *et al.*, 2241.
- Elmdale formation, Carboniferous, Kansas: Beede and Rogers, 181; Wooster, 2636.
- Elm Grove limestone, Carboniferous, West Virginia: Grimsley, 1046.
- Elvins formation, Cambro-Ordovician, Missouri: Shepard, 2194.
- Ely greenstone, Archean, Minnesota: Abbott, 1.
- Ely limestone, Carboniferous, Nevada: Lawson, 1526.
- Embar formation, Carboniferous, Wyoming: Darton, 642, 647; Fisher, 873.
- Empire formation, Algonkian, Montana: Walcott, 2470.
- Empire shale, Algonkian, Montana: Barrell, 149.
- Emporia limestone, Carboniferous, Kansas: Beede and Rogers, 181; Wooster, 2636.
- Enfield shale member, Devonian, New York: Williams, 2583.
- Englishtown, Cretaceous, New Jersey: Clark, 483.
- Englishtown sand, Cretaceous, New Jersey: Weller, 2520.
- Enochkin formation, Jurassic, Alaska: Brooks, 313.
- Eo-Huronian, pre-Cambrian, Michigan: Lane and Seaman, 1518.
- Erle (Bronson) beds, Carboniferous, Kansas: Wooster, 2636.
- Erwin quartzite, Cambrian, North Carolina and Tennessee: Keith, 1354.
- Escondido beds of Eagle Pass formation, Cretaceous, Texas: Udden, 2408.
- Eskridge shales, Carboniferous, Kansas: Beede and Rogers, 181.

- Esopus shales, Devonian, New York: Graubau, 991.
- Estill clay, Silurian, Kentucky: Foerste, 883, 884.
- Eureka beds, Carboniferous, Kansas: Wooster, 2636.
- Eureka quartzite, Ordovician, Nevada and California: Ball, 120.
- Eutaw formation, Cretaceous, Alabama: Smith, 2229.
- Eutaw formation, Cretaceous, Mississippi: Logan, 1608.
- Eutaw sands, Cretaceous, Mississippi: Crider, 595; Crider and Johnson, 599.
- Eutaw sand, Cretaceous, Tennessee: Glenn, 971.
- Evans granite, Colorado: Collier, 553.
- Evanston formation, Tertiary, Wyoming: Schultz, 2151; Veatch, 2437.
- Everton limestone, Ordovician, Arkansas and Missouri: Purdue, 1967.
- Fairhaven diatomaceous earth, Miocene, Maryland: Shattuck, 2185, 2188.
- Fairhaven diatomaceous member, Miocene, Maryland: Shattuck *et al.*, 2193.
- Fairview formation, Ordovician, Ohio and Kentucky: Bassler, 156.
- Fall Creek conglomerate lentil, Devonian, New York: Williams, 2583.
- Farnham formation, Ordovician, Canada: Young, 2660.
- Fayette clays, Tertiary, Texas: Ries, 2058.
- Fayette sands, Tertiary, Texas: Fenneman, 859.
- Fayetteville formation, Mississippian, Arkansas: Purdue, 1971.
- Fayetteville formation, Mississippian, Indian Territory: Taff, 2332.
- Fern Glen formation, Mississippian, Missouri: Weller, 2519.
- Fern Glen (Kinderhook), Mississippian, Illinois: Fenneman, 860.
- Fernando formation, Miocene-Pliocene-Pleistocene, California: Arnold and Anderson, 66.
- Fernando formation, Pliocene, California: Arnold, 63; Eldridge and Arnold, 779.
- Fernando formation, Tertiary, California: Arnold and Anderson, 67.
- Fernie shale, Alberta: Dowling, 735.
- Fernie shale, Jurassic, Alberta: Cairnes, 381; Dowling, 736.
- Fickett series, Carboniferous (in part), Alaska: Brooks, 313.
- Fish Creek sandstone, Carboniferous, Appalachian region: Stevenson, 2295.
- Fish Creek sandstone, Carboniferous, Pennsylvania: Clapp, 476.
- Fish Creek sandstone, Carboniferous, West Virginia: Grimsley, 1046.
- Fishpot limestone, Carboniferous, Appalachian region: Stevenson, 2295.
- Fishpot limestone, Carboniferous, Pennsylvania: Clapp, 475.
- Flades clay, Silurian, Kentucky: Foerste, 883, 884.
- Flathead quartzite, Cambrian, Montana: Emmons, 806; Rowe, 2090; Walcott, 2470.
- Flatwoods clay, Eocene, Mississippi: Logan and Hand, 1609.
- Flatwoods clay, Tertiary, Mississippi: Crider, 595.
- Fleming clay, Tertiary, Louisiana: Veatch, 2436, 2437.
- Florena member of Garrison formation, Carboniferous, Kansas: Beede and Rogers, 181.
- Florence beds, Permian, Kansas: Wooster, 2636.
- Florence flints, Permian, Kansas: Wooster, 2636.
- Florissant formation, Tertiary (Eocene), Colorado: Henderson, 1127.
- Flower-pot shales, Permian, Kansas: Wooster, 2636.
- Fordham gneiss, pre-Cambrian, New York: Berkey, 207.
- Fort Atkinson limestone, Ordovician, Iowa: Calvin, 388.
- Fort Benton shales, Cretaceous, Iowa: Macbride, 1639.
- Fort Pierre formation, Cretaceous, Montana: Rowe, 2090.
- Fort Riley limestones, Permian, Kansas: Wooster, 2636.
- Fort Scott limestone, Pennsylvanian, Kansas: Schrader and Haworth, 2144; Wooster, 2636.
- Fort Smith formation, Carboniferous, Arkansas: Collier, 556.
- Fort Union, Cretaceous, Montana: Brown, 325.
- Fort Union, Tertiary, Wyoming: Veatch, 2439.
- Fort Union formation, Cretaceous, Montana: Leonard, 1564.
- Fort Union formation, Cretaceous, North Dakota: Leonard, 1563.
- Fort Union formation, Tertiary, Wyoming: Veatch, 2440.
- Fort Worth formation, Cretaceous, Arkansas: Veatch, 2436.
- Fortymile series, Alaska: Brooks, 313.
- Fortymile Creek formation, pre-Devonian, Alaska: Prindle, 1956.
- Fountain formation, Carboniferous, Colorado: Finlay, 868.
- Fox Hills formation, Cretaceous, Montana: Brown, 325; Leonard, 1564; Rowe, 2090.
- Fox Hills formation, Cretaceous, Wyoming: Darton, 642; Fisher, 873.
- Fox Hills member of Montana formation, Cretaceous, North Dakota: Leonard, 1563.
- Fox Hills sandstone, Cretaceous, Colorado: Darton, 648.
- Fox Hills sandstone, Cretaceous, North Dakota: Leonard, 1560.
- Fox Hills sandstone, Cretaceous, Wyoming: Darton and O'Harra, 656.

- Franciscan formation, Jurassic?, California: Arnold and Anderson, 66, 67.
- Franciscan (Golden Gate) series, pre-Cretaceous, California: Crandall, 591.
- Franklin limestone, Carboniferous, Appalachian region: Stevenson, 2295.
- Freda sandstone, Cambrian, Michigan: Lane and Seaman, 1518.
- Freeport group, Carboniferous, West Virginia: Grimsley, 1044.
- Freeport limestone, Carboniferous, Pennsylvania: Butts, 368; Stevenson, 2294.
- Freeport limestone, Carboniferous, West Virginia: Grimsley, 1046.
- Freeport sandstone, Carboniferous, Pennsylvania: Butts, 368; Woolsey, 2634.
- Freeport (Roaring Creek) sandstone, Carboniferous, West Virginia: Grimsley, 1046.
- Fremont limestone, Ordovician, Colorado: Darton, 648.
- Frio clays, Tertiary, Texas: Fenneman, 859; Ries, 2058.
- Frontier formation, Cretaceous, Wyoming: Schultz, 2151; Veatch, 2440.
- Fulda sandstone, Permian, Texas: Case, 443.
- Fulton green shale, Carboniferous, West Virginia: Grimsley, 1046.
- Fulton member, Ordovician, Ohio and Kentucky: Bassler, 156.
- Furnaceville iron ore, Silurian, New York: Hartnagel, 1085.
- Furnaceville iron ore formation, Silurian, New York: Clarke, 494.
- Fuson formation, Cretaceous, Wyoming: Darton and O'Harra, 656.
- Gakona group, Tertiary, Alaska: Brooks, 313.
- Galena (Boone) beds, Mississippian, Kansas: Wooster, 2636.
- Galena dolomite, Ordovician, upper Mississippi Valley: Bain, 99.
- Galena limestone, Ordovician, Iowa: Calvin, 387, 388; Leonard, 1559; Savage, 2128.
- Galena limestone, Ordovician, Wisconsin: Grant, 1017; Grant and Burchard, 1021.
- Galena series, Ordovician, upper Mississippi Valley: Sardeson, 2122.
- Galena stage, Ordovician, Iowa: Beyer and Williams, 234.
- Galesburg shale, Pennsylvanian, Kansas: Schrader and Haworth, 2144; Wooster, 2636.
- Galice formation, Jurassic, Oregon: Diller, 724.
- Gallatin limestone, Cambrian, Montana: Rowe, 2090.
- Gardiner clays, Pleistocene, New England: Fuller, 913.
- Garnett limestone, Carboniferous, Kansas: Wooster, 2636.
- Garrard, Ordovician, Kentucky: Miller, 1748.
- Garrison formation, Carboniferous, Kansas: Beede and Rogers, 181.
- Gasconade limestone, Cambro-Ordovician, Missouri: Shepard, 2194.
- Gatun formation, Oligocene, Panama: Howe, 1244.
- Genesee black shale, Devonian, New York: Luther, 1633, 1634.
- Genesee member, Devonian, Maryland: Clark and Mathews, 488.
- Genesee shale, Devonian, New York: Williams, 2583.
- Genesee shale, Devonian, Pennsylvania: Butts, 367.
- Geneva limestone, Devonian, Indiana: Stauffer, 2278.
- Genundewah limestone, Devonian, New York: Luther, 1633, 1634.
- Gering beds, Tertiary, Wyoming and Nebraska: Peterson, 1916.
- Giants Range granite, Algonkian, Minnesota: Abbott, 1.
- Gila conglomerate, Quaternary, Arizona: Lee, 1541.
- Gilboy sandstone, Carboniferous, West Virginia: Grimsley, 1046.
- Gilmore sandstone, Carboniferous, Appalachian region: Stevenson, 2295.
- Gilmore sandstone, Carboniferous, Pennsylvania: Clapp, 476.
- Gladeville sandstone, Carboniferous, Virginia: Stone, 2311.
- Glastonbury granite-gneiss, Connecticut: Gregory, 1034; Gregory and Robinson, 1038.
- Gleneyrie formation, Carboniferous, Colorado: Finlay, 868.
- Glen Park limestone, Mississippian, Missouri: Weller, 2519.
- Goobic sands, Quaternary, Alaska: Brooks, 313.
- Goodland limestone, Cretaceous, Arkansas: Veatch, 2436.
- Goodnight formation, Tertiary, Texas: Gould, 986.
- Goodrich quartzite, pre-Cambrian, Michigan: Lane and Seaman, 1518.
- Goose Creek marl, Miocene, South Carolina: Sloan, 2218.
- Gordon sandstone, Devonian, Pennsylvania: Woolsey, 2634.
- Gosport greensand, Eocene, Alabama: Smith, 2229.
- Gower formation, Silurian, Iowa: Calvin, 387; Savage, 2128.
- Gower stage, Silurian, Iowa: Beyer and Williams, 234.
- Grafton quartzite, Cambrian, Rhode Island: Emerson and Perry, 790.
- Grampus gneiss, pre-Cambrian, New York: Cushing, 614.
- Grand Gulf formation, Miocene, Mississippi: Logan, 1608.
- Grand Gulf formation, Pliocene, Alabama: Smith, 2229.

- Grand Gulf formation, Tertiary, Gulf region: Smith, 2226, 2228.
- Grand Gulf formation, Tertiary, Mississippi: Crider, 595; Crider and Johnson, 599.
- Grand Rapids, upper and lower, Carboniferous, Michigan: Cooper, 575.
- Graneros shale, Cretaceous, Colorado: Darton, 648; Fisher, 869.
- Graneros shale, Cretaceous, Nebraska: Condra, 570.
- Graneros shale, Cretaceous, Wyoming: Darton and O'Harra, 656.
- Gravina series, Cretaceous, Alaska: Brooks, 313.
- Graydon sandstone, Pennsylvanian, Missouri: Shepard, 2194.
- Great conglomerate, Cambrian, Michigan: Lane and Seaman, 1518.
- Great Smoky conglomerate, Cambrian, North Carolina and Tennessee: Keith, 1352.
- Greenbrier formation, Mississippian, Maryland: Clark and Mathews, 488.
- Greenbrier limestone, Carboniferous, Pennsylvania: Clapp, 475.
- Greenbrier limestone, Carboniferous, West Virginia: Grimsley, 1044.
- Greenbrier limestone, Mississippian, Pennsylvania: Clapp, 477.
- Greenbrier limestone, Mississippian, Virginia: Bassler, 158.
- Greendale bed, Ordovician, Kentucky: Foerste, 884.
- Greene formation, Carboniferous, Appalachian region: Stevenson, 2295.
- Greene formation, Carboniferous, Pennsylvania: Clapp, 475, 476.
- Greene formation, Carboniferous, Pennsylvania: Stone and Clapp, 2314.
- Greene formation, Carboniferous, Pennsylvania, Ohio, and West Virginia: Griswold and Munn, 1048.
- Greene formation, Carboniferous (Pennsylvanian), Pennsylvania: Clapp, 477.
- Greenhorn formation, Cretaceous, Wyoming: Darton and O'Harra, 656.
- Greenhorn limestone, Cretaceous, Colorado: Darton, 648; Fisher, 869.
- Greenhorn limestone, Cretaceous, Nebraska: Condra, 570.
- Green River, Tertiary, Wyoming: Veatch, 2439.
- Green River formation, Tertiary, Wyoming: Schultz, 2151; Veatch, 2437.
- Greer formation, Permian, Texas: Gould, 986, 987.
- Grenville series, pre-Cambrian: Adams *et al.*, 13.
- Grenville series, pre-Cambrian, New York: Berkey, 207; Cushing, 614.
- Grenville series, pre-Cambrian, Ontario: Miller and Knight, 1759.
- Greyson formation, Algonkian, Montana: Barrell, 149.
- Greyson shales, Algonkian, Montana: Rowe, 2090.
- Grimes sandstone, Devonian, New York: Luther, 1634.
- Guadaloupan series, Carboniferous, New Mexico: Keyes, 1377.
- Gulf series, Cretaceous, Arkansas: Veatch, 2436.
- Gunflint formation, Algonkian, Minnesota: Abbott, 1.
- Gunstock dike, New Hampshire: Pirsson and Washington, 1934.
- Gunstock gneiss, New Hampshire: Pirsson and Washington, 1934.
- Guye formation, Tertiary, Washington: Smith and Calkins, 2240.
- Hackberry shales, Devonian, Iowa: Williams, 2588.
- Hackberry shales, Permian, Kansas: Wooster, 2636.
- Haddam granite-gneiss, Connecticut: Gregory, 1034; Gregory and Robinson, 1038.
- Hale formation, Pennsylvanian, Arkansas: Purdue, 1971.
- Hamburg beds, Cretaceous, South Carolina: Sloan, 2217.
- Hamburg clays, Cretaceous, South Carolina: Sloan, 2218.
- Hamburg slate, pre-Cambrian, Wisconsin: Weidman, 2512.
- Hamilton formation, Devonian, Pennsylvania: Butts, 367.
- Hamilton member, Devonian, Maryland: Clark and Mathews, 488.
- Hamilton shales, Devonian, New York: Grabau, 991.
- Hamilton shale formation, Devonian, New York: Williams, 2583.
- Hamilton shale, Devonian, West Virginia: Grimsley, 1044.
- Hampshire formation, Devonian, Maryland: Clark and Mathews, 488.
- Hampshire formation, Devonian, West Virginia: Grimsley, 1044.
- Hampton clays, Pleistocene, South Carolina: Sloan, 2218.
- Hampton shale, Cambrian, Tennessee: Keith, 1354.
- Hance formation, Carboniferous, Kentucky: Ashley and Glenn, 77.
- Hannibal formation, Mississippian, Missouri: Shepard, 2194.
- Harding sandstone, Ordovician, Colorado: Darton, 648.
- Harper beds, Permian, Kansas: Wooster, 2636.
- Harpers formation, Cambrian, Maryland: Clark and Mathews, 488.
- Harpers formation, Cambrian, Pennsylvania: Stose, 2318.
- Harpers shale, Cambrian, West Virginia: Grimsley, 1044.
- Harrison beds, Tertiary, Wyoming and Nebraska: Peterson, 1916.
- Harrison diorite, Cambrian, New York: Berkey, 207.
- Harrodsburgh limestone, Mississippian, Indiana: Blatchley, 246; Reagan, 1998.



- Hartford limestone, Carboniferous, Kansas : Wooster, 2636.
- Hartland (Hoosac) schist, Connecticut : Gregory, 1034.
- Hartland schist, Connecticut : Gregory and Robinson, 1038.
- Hartshorne sandstone, Carboniferous, Arkansas : Collier, 556.
- Harvard conglomerate, Massachusetts : Mansfield, 1674.
- Hastings phase of Grenville series, pre-Cambrian : Adams *et al.*, 13.
- Hatch shale and flags, Devonian, New York : Luther, 1634.
- Hatchetigbee formation, Eocene, Alabama : Smith, 2229.
- Hawkins formation, pre-Tertiary, Washington : Smith and Calkins, 2240.
- Hayes River beds, Alaska : Brooks, 313.
- Hebron gneiss, Connecticut : Gregory, 1034 ; Gregory and Robinson, 1038.
- Helderberg formation, Devonian, Maryland : Clark and Mathews, 488.
- Helderberg limestone, Silurian, West Virginia : Grimsley, 1044.
- Helen formation, Canada : Bell, 189.
- Helen iron formation, Ontario : Coleman, 541 ; Moore, 1770.
- Helena formation, Algonkian, Montana : Walcott, 2470.
- Helena limestone, Algonkian, Montana : Barrell, 149.
- Hell Creek beds, Cretaceous, Montana : Brown, 325.
- Henderson granite, Archean, North Carolina and South Carolina : Keith, 1353.
- Henrietta limestone, Pennsylvanian, Missouri : Shepard, 2194.
- Henson tuff, Colorado : Cross *et al.*, 607.
- Hermosa formation, Carboniferous (Pennsylvanian), Colorado : Cross *et al.*, 607.
- Herod gravels, Pleistocene, New England : Fuller, 913.
- Hertha limestone, Carboniferous, Kansas : Beede and Rogers, 181 ; Wooster, 2636.
- Hesse quartzite, Cambrian, Tennessee : Keith, 1354.
- Highbridge, Ordovician, Kentucky : Miller, 1748.
- High Falls shale, Silurian, New York : Grabau, 991 ; Hartnagel, 1084.
- High Point sandstone, Devonian, New York : Luther, 1634.
- High Point sandstones, New York : Jones, 1318.
- Hignite formation, Carboniferous, Kentucky : Ashley and Glenn, 77.
- Hilliard formation, Cretaceous, Wyoming : Schultz, 2151.
- Hiwassee slate, Cambrian, North Carolina : Keith, 1352.
- Hiwassee slate, Cambrian, Tennessee : Keith, 1354.
- Holston formation, Ordovician, Virginia : Bassler, 158.
- Homewood sandstone, Carboniferous, Pennsylvania : Butts, 368.
- Homewood sandstone, Carboniferous, Pennsylvania, Ohio, and West Virginia : Griswold and Munn, 1048.
- Honaker limestone, Cambrian, Tennessee : Keith, 1354.
- Honaker limestone, Cambrian, Virginia : Bassler, 158.
- Hoosac schist, Connecticut : Gregory, 1034.
- Hopkinton formation, Silurian, Iowa : Calvin, 387 ; Norton, 1805 ; Savage, 2128.
- Hopkinton stage, Silurian, Iowa : Beyer and Williams, 234.
- Hornerstown, Cretaceous, New Jersey : Clark, 483.
- Hornerstown marl, Cretaceous, New Jersey : Weller, 2520.
- Hornsboro sandstone, Jura-Triassic, South Carolina : Sloan, 2218.
- Horsefly gravels, Tertiary, Yukon Territory : Brooks, 313.
- Hosselkus limestone, Triassic, California : Diller, 721.
- Howard limestone, Carboniferous, Kansas : Wooster, 2636.
- Howson andesite, Tertiary, Washington : Smith and Calkins, 2240.
- Hudson River slates, Ordovician, New York : Berkey, 207.
- Hudson schist, Cambro-Ordovician, Connecticut : Hobbs, 1185.
- Hueco limestone, Carboniferous, New Mexico : Keyes, 1377.
- Humphrey shales, Carboniferous, Kansas : Wooster, 2636.
- Hunker series, Yukon Territory : Brooks, 313.
- Huron group, Mississippian, Indiana : Blatchley, 246.
- Huronian, lower, series, pre-Cambrian, Ontario : Silver, 2212.
- Huronian sediments, pre-Cambrian, Ontario : Coleman, 539.
- Idaho Springs formation, pre-Cambrian, Colorado : Ball, 118.
- Ignacio quartzite, Cambrian, Colorado : Cross *et al.*, 607.
- Illinoian, Quaternary, Iowa : Calvin, 387.
- Independence limestone, Carboniferous, Kansas : Wooster, 2636.
- Independence sub-stage, Devonian, Iowa : Norton, 1805.
- Indian Fields formation, Silurian, Kentucky : Foerste, 883, 884.
- Indian River series, Yukon Territory : Brooks, 313.
- Inwood limestone, pre-Cambrian, New York : Berkey, 207.
- Iola limestone, Pennsylvanian, Kansas : Beede and Rogers, 181 ; Schrader and Haworth, 2144.
- Iola (Earlton) limestone, Carboniferous, Kansas : Wooster, 2636.
- Ione formation, Tertiary, California : Diller, 721.

- Iowan drift, Pleistocene, Iowa: Arey, 53; Calvin, 387, 388; Leonard, 1559; Macbride, 1639; Norton, 1805; Savage, 2128; Williams, 2588.
- Irasburg conglomerate, Ordovician, Vermont: Richardson, 2037.
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- Poughquag quartzite, Cambro-Ordovician, Connecticut: Hobbs, 1185.
- Powers Bluff quartzite, pre-Cambrian, Wisconsin: Weldman, 2512.
- Prairie du Chien formation, Ordovician, upper Mississippi Valley: Bain, 99.
- Prairie du Chien limestone, Ordovician, Iowa: Beyer and Williams, 234.
- Prairie du Chien formation, Ordovician, Wisconsin: Grant and Burchard, 1021.
- Prattsburg shales and flags, Devonian, New York: Luther, 1634.
- Pre-Kansan, Quaternary, Iowa: Calvin, 387.
- Preston formation, Cretaceous, Arkansas: Veatch, 2436.
- Preston gabbro-diorite, Connecticut: Gregory and Robinson, 1038.
- Prichard (?) formation, pre-Cambrian, Montana: Emmons, 806.
- Prichard slate, Algonkian, Montana: Walcott, 2470.
- Prospect porphyritic gneiss, Connecticut: Gregory, 1034; Gregory and Robinson, 1038.
- Prospect Mountain quartzite, Cambrian?, Nevada and California: Ball, 120.
- Prosperity limestone, Carboniferous, Pennsylvania: Clapp, 475.
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- Prout limestone, Devonian, Ohio: Stauffer, 2277.
- Providence Cove beds, Vancouver Island: Hall, 1064.
- Puente shale, Miocene, California: Eldridge and Arnold, 779.
- Puerco, Tertiary, Wyoming: Veatch, 2439.
- Puerco marls, Eocene, New Mexico: Keyes, 1388.
- Puerco marl, Eocene, Colorado and New Mexico: Shaler, 2176.
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- Puget group, Cretaceous, Washington: Arnold, 56.
- Puget group, Tertiary, British Columbia: Brooks, 313.
- Pulliam formation, Cretaceous, Texas: Udden, 2408.
- Purgatory conglomerate, Massachusetts: Mansfield, 1674.
- Purissima formation, Tertiary, California: Arnold, 57.

- Putnam gneiss, Connecticut: Gregory, 1034; Gregory and Robinson, 1038.
- Putnam Hill limestone, Carboniferous, Pennsylvania: Stevenson, 2294.
- Quadrant (?) formation, Carboniferous, Montana: Emmons, 806.
- Quadrant formation, Mississippian, Montana: Rowe, 2090.
- Quartermaster formation, Permian, Texas: Gould, 986, 987.
- Quebec group, Canada: Young, 2660.
- Queen Charlotte group, Cretaceous, British Columbia: Brooks, 313.
- Quinalt formation, Tertiary, Washington: Arnold, 56.
- Quincy group, early Carboniferous, or late pre-Carboniferous: Emerson and Perry, 790.
- Racine limestone, Silurian, Wisconsin: Alden, 23.
- Rampart series, Devonian, Alaska: Brooks, 313; Prindle, 1956.
- Ramsay Lake graywacke conglomerate, pre-Cambrian, Ontario: Coleman, 539.
- Rancocas formation, Cretaceous, Maryland and Delaware: Miller, 1749.
- Raritan clay, Cretaceous, New Jersey: Weller, 2520.
- Raritan formation, Cretaceous, Maryland: Clark and Mathews, 488; Shattuck *et al.*, 2193.
- Raritan formation, Cretaceous, Maryland and Delaware: Miller, 1749.
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- Ravalli (?) formation, pre-Cambrian, Montana: Emmons, 806.
- Ravalli series, Algonkian, Montana: Walcott, 2470.
- Red Bank sand, Cretaceous, New Jersey: Weller, 2520.
- Red Beds, Permian, New Mexico: Ordóñez, 1831.
- Red Beds, Triassic?, Colorado: Darton, 648; Gale, 922.
- Red Bluff formation, Quaternary, California: Diller, 721.
- Red Bluff sandstones, Permian, Kansas: Wooster, 2636.
- Red Mountain formation (Clinton), Silurian, Alabama: Smith, 2229.
- Redstone limestone, Carboniferous, Appalachian region: Stevenson, 2295.
- Redstone limestone, Carboniferous, West Virginia: Grimsley, 1044, 1046.
- Rommel granodiorite, Jurassic, Cascade Mountains: Daly, 632.
- Revett quartzite, Algonkian, Montana: MacDonald, 1658.
- Rhinestreet black shale, Devonian, New York: Luther, 1633, 1634.
- Rib Hill quartzite, pre-Cambrian, Wisconsin: Weldman, 2512.
- Richmond division of the Cincinnati, Ordovician, Illinois: Weller, 2517, 2524.
- Richmond limestone, Ordovician, Illinois: Weller, 2522.
- Richmond limestone and shales, Ordovician, Missouri: Bowman and Reeds, 277.
- Ripley formation, Cretaceous, Alabama: Smith, 2229.
- Ripley formation, Cretaceous, Illinois: Purdy and DeWolf, 1973.
- Ripley formation, Cretaceous, Mississippi: Crider, 595; Crider and Johnson, 599; Logan, 1608.
- Ripley formation, Cretaceous, North Carolina: Stephenson, 2281.
- Ritchie red beds, Carboniferous, Appalachian region: Stevenson, 2295.
- Riverside sandstone, Mississippian, Indiana: Reagan, 1998.
- Roan gneiss, Archean, North Carolina: Keith, 1352, 1354.
- Rochester shale, Silurian, New York: Bassler, 156; Hartnagel, 1085.
- Rockcastle, Carboniferous, Appalachian region: Stevenson, 2295.
- Rockwood (Clinton), Virginia: Eckel, 765.
- Rockwood formation, Silurian, West Virginia: Grimsley, 1044.
- Rocky Mountain quartzite, Carboniferous, Alberta: Dowling, 736.
- Rogersville limestone, Carboniferous, Appalachian region: Stevenson, 2295.
- Rogersville shale, Cambrian, Virginia: Bassler, 158.
- Rome shales, Cambrian, Georgia: Watson, 2483.
- Romney formation, Devonian, Maryland: Clark and Mathews, 488.
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- Rondout formation, Silurian, New York: Hartnagel, 1084.
- Rondout limestone, Silurian, New York: Grabau, 991.
- Rosalie granite, pre-Cambrian, Colorado: Ball, 118.
- Rosebud beds, Tertiary, South Dakota: Matthew, 1702.
- Rosendale cement rock, Silurian, New York: Grabau, 991.
- Rosiclare sandstone, Mississippian, Illinois: Weller, 2523.
- Roslyn formation, Tertiary, Washington: Smith and Calkins, 2240.
- Roubidoux sandstone, Cambro-Ordovician, Missouri: Shepard, 2194.
- Rove slates, Algonkian, Minnesota: Abbott, 1.
- Roxbury conglomerate, Carboniferous?, Massachusetts: Mansfield, 1674.
- Russell shales, Cambrian, Virginia: Bassler, 158.
- Ruth limestone, Carboniferous, Nevada: Lawson, 1526.
- Rutledge limestone, Cambrian, Virginia: Bassler, 158.
- Sabine formation, Tertiary, Arkansas and Louisiana: Veatch, 2436, 2437.

- Point Pleasant formation, Ordovician, Ohio and Kentucky: Bassler, 156.
- Polson Canyon formation, Cretaceous, Colorado: Darton, 648.
- Polk Bayou limestone, Ordovician, Arkansas: Purdue, 1970.
- Pomfret phyllite, Connecticut: Gregory, 1034; Gregory and Robinson, 1038.
- Poor Mountain zone, Cambrian?, South Carolina: Sloan, 2218.
- Portage member, Devonian, Maryland: Clark and Mathews, 488.
- Port Clarence limestone, Silurian, Alaska: Brooks, 313.
- Porters Creek clay, Cretaceous, Mississippi: Crider, 598.
- Porters Creek clay, Tertiary, Mississippi: Crider, 595; Crider and Johnson, 599.
- Porters Creek (Flatwoods) clay, Eocene, Mississippi: Logan, 1608.
- Porters Creek formation, Tertiary, Illinois: Purdy and DeWolf, 1973.
- Porters Creek formation, Tertiary, Missouri: Shepard, 2194.
- Porters Creek formation, Tertiary, Tennessee, Kentucky, and Illinois: Glenn, 971.
- Port Ewen limestone, Devonian, New York: Grabau, 991.
- Port Hudson formation, Quaternary, Mississippi: Crider, 595; Crider and Johnson, 599.
- Port Hudson formation, Quaternary, Louisiana and Arkansas: Veatch, 2436.
- Port Renfrew series, Vancouver Island: Hall, 1064.
- Potapaco member, Eocene, Maryland: Shattuck *et al.*, 2193.
- Potom formation, Jurassic, California: Diller, 721.
- Potomac formation, Cretaceous, Mississippi: Logan and Hand, 1609.
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- Potomac group, Jurassic-Cretaceous, Maryland: Clark and Mathews, 488.
- Potosi volcanic series, Colorado: Cross *et al.*, 607.
- Potsdam sandstone, Cambrian, Illinois: Weller, 2517, 2524.
- Potsdam sandstone, Cambrian, Wisconsin: Grant, 1017; Weldman, 2512.
- Potsdam series, Cambrian, Iowa: Beyer and Williams, 234.
- Potsdam, Ordovician, Mississippi Valley: Davis, 663.
- Pottsville conglomerate, Lower Carboniferous, Pennsylvania: Barrell, 150.
- Pottsville formation, Carboniferous, Ohio: Carney, 427.
- Pottsville formation, Carboniferous, Pennsylvania: Butts, 368; Clapp, 475, 477; Woolsey, 2634.
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- Red Bluff sandstones, Permian, Kansas: Wooster, 2636.
- Red Mountain formation (Clinton), Silurian, Alabama: Smith, 2229.
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- Rommel granodiorite, Jurassic, Cascade Mountains: Daly, 632.
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- Romney formation, Devonian, Maryland: Clark and Mathews, 488.
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- Rondout formation, Silurian, New York: Hartnagel, 1084.
- Rondout limestone, Silurian, New York: Grabau, 991.
- Rosalie granite, pre-Cambrian, Colorado: Ball, 118.
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- Port Hudson formation, Quaternary, Mississippi: Crider, 595; Crider and Johnson, 599.
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- Port Renfrew series, Vancouver Island: Hall, 1064.
- Potapaco member, Eocene, Maryland: Shattuck *et al.*, 2193.
- Potom formation, Jurassic, California: Diller, 721.
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- Potsdam sandstone, Cambrian, Illinois: Weller, 2517, 2524.
- Potsdam sandstone, Cambrian, Wisconsin: Grant, 1017; Weidman, 2512.
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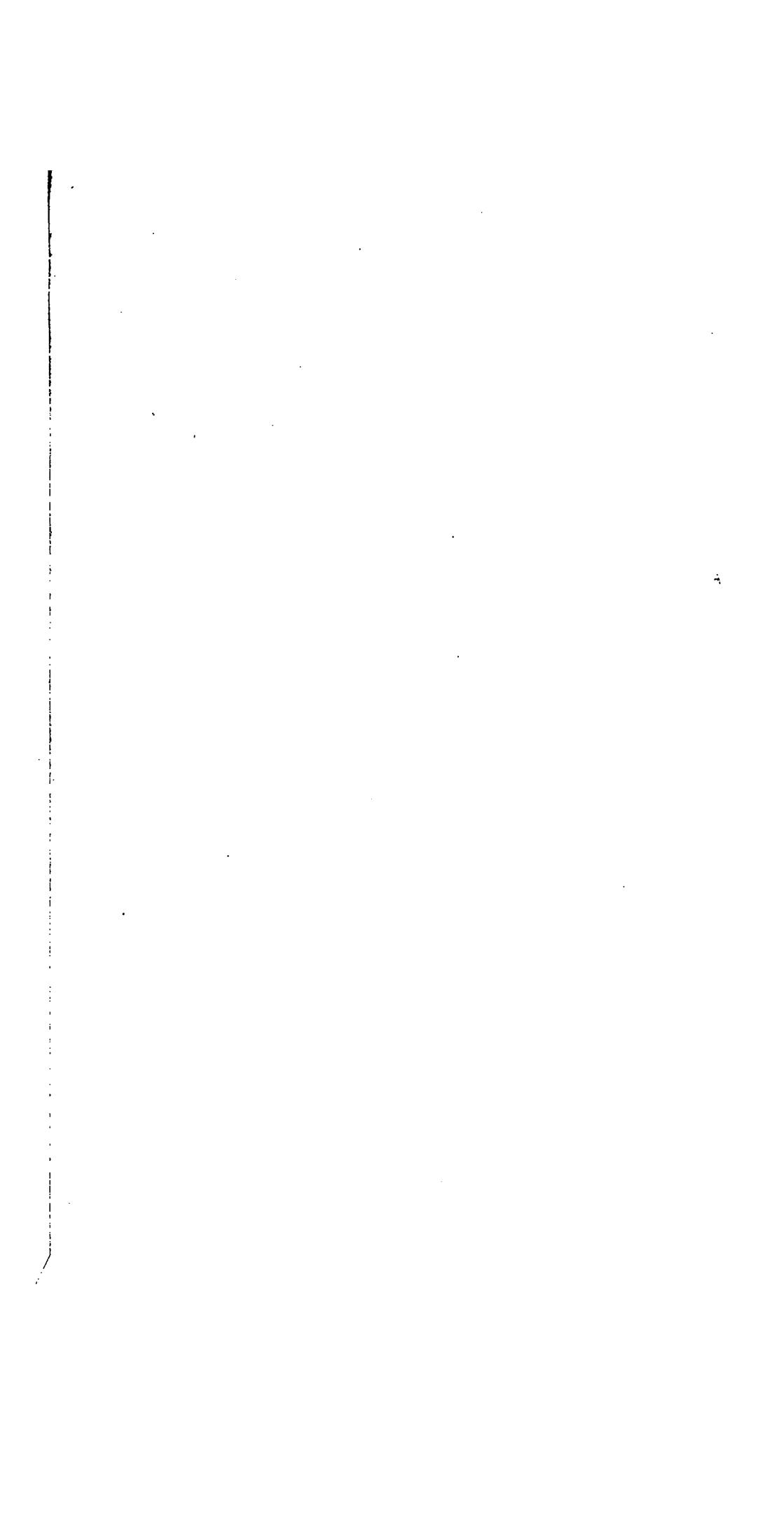
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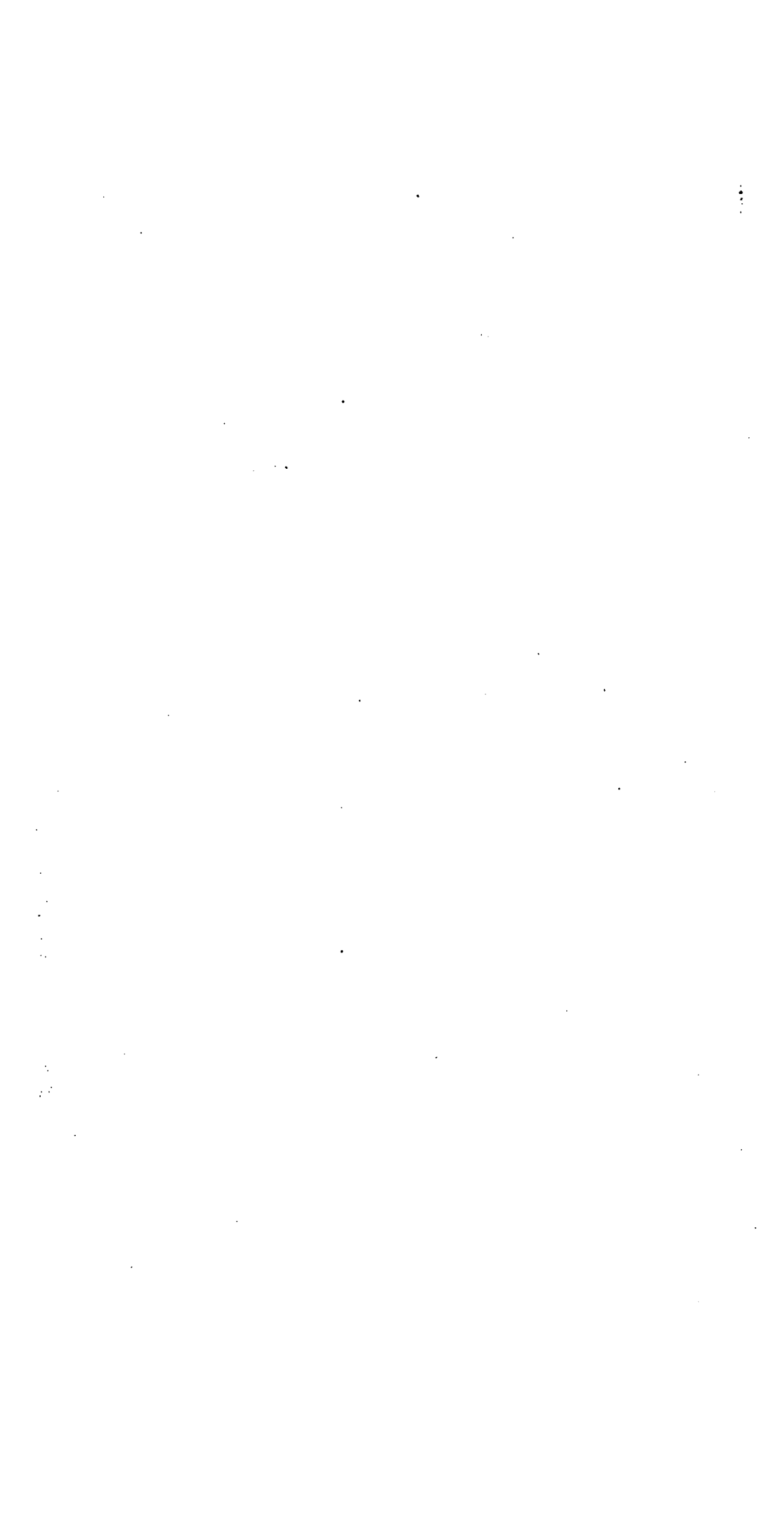












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